

**Official Transcript of Proceedings**  
**NUCLEAR REGULATORY COMMISSION**

Title: Draft Environmental Impact Statement for  
Callaway Plant License Renewal  
Public Meeting - Afternoon Session

Docket Number: 50-483

Location: Fulton, Missouri

Date: Wednesday, March 19, 2014

Work Order No.: NRC-643

Pages 1-54

**NEAL R. GROSS AND CO., INC.**  
**Court Reporters and Transcribers**  
**1323 Rhode Island Avenue, N.W.**  
**Washington, D.C. 20005**  
**(202) 234-4433**

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
+ + + + +  
PUBLIC MEETING  
ON THE DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT  
STATEMENT FOR THE LICENSE RENEWAL  
OF CALLAWAY PLANT, UNIT 1

+ + + + +  
AFTERNOON SESSION

+ + + + +  
March 19, 2014

2:00 p.m. - 3:30 p.m.

+ + + + +  
Fulton City Hall Council Chambers  
18 East 4th Street  
Fulton, Missouri 65251

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

1  
2 MR. BURTON: I want to welcome everybody  
3 to this afternoon's meeting. The purpose of this  
4 meeting is to provide an opportunity for members of the  
5 public to provide comments on the NRC's Staff's Draft  
6 Supplemental Environmental Impact Statement prepared  
7 by the staff as part of its review of Callaway's  
8 application to [renew] its operating license for an  
9 additional twenty years.

10 My name is William Burton. I am going to  
11 be serving as your Facilitator today. My purpose is  
12 to ensure that the meeting is productive and  
13 informative. Now, I do need to let you guys know that  
14 it is true that my name is William Burton, but I  
15 generally go by Butch. William is my granddad, just  
16 so you know that I prefer Butch.

17 This is a Category 3 public meeting to  
18 encourage active participation and information  
19 exchange with the public, so to take comments on the  
20 Draft Supplemental EIS. You may hear it called the  
21 DSEIS because we like to use acronyms a lot. Hopefully  
22 everyone has signed in, received copies of the agenda,  
23 the presentation slide and a feedback form. If you  
24 have not signed in nor received any of these documents  
25 you can find them at the registration desk.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1           The agenda today includes several items,  
2 including an overview of NRC's Staff's License Renewal  
3 Process and a summary of the results of the staff's  
4 environmental review, followed by a few minutes for you  
5 to ask questions on anything that you've heard at that  
6 point in the presentation. After that we will open it  
7 up for the main purpose of the meeting, which is to get  
8 your comments on the [DSEIS]. After that we will have  
9 final remarks and then we will close the meeting. Any  
10 questions on the agenda? Yes.

11           MR. SMITH: Are we allowed to address  
12 questions to the Nuclear Regulatory Commission during  
13 the public commenting period?

14           MR. BURTON: Well, the way we would prefer  
15 to do this is if you have questions not specifically  
16 related to the presentation; if you have another  
17 question, we would like to have you do that during  
18 the, -- what we call the Q and A session, which is  
19 immediately following the main presentation. So if  
20 you have those kinds of questions we'll entertain them.

21           MR. SMITH: Yeah, I have very specific  
22 questions.

23           MR. BURTON: Okay. Well that will be the  
24 time to ask them. And hopefully we will be able to  
25 address them. Any other questions on the agenda?

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 (No audible response)

2 MR. BURTON: Okay. Before we get into the  
3 meat of the presentation I want to go over a few  
4 logistics. This meeting is being transcribed so in  
5 order to get a clean transcript we would ask you to  
6 minimize the distractions. So anything that you have  
7 that beeps, buzzes, talks back to you or that kind of  
8 thing, if you would put them on mute or turn them off  
9 we would appreciate it. Also we would like as much as  
10 possible to minimize side conversations because they  
11 do get picked up during the recording of the transcript.

12 For those of you who don't know, the  
13 restrooms are out this main door; men's room to the  
14 right, lady's room to the left. If we do need to  
15 evacuate for some reason we will just follow the  
16 directions from security or some of the folks who work  
17 here. When speaking we prefer for you to use a mic,  
18 again, so that we can pick it up on the transcription.  
19 You can either come up to the podium to ask your question  
20 or make your comment, or we do have a handheld mic that  
21 I will bring to you if you would prefer to do that.

22  
23 Finally, we are always looking to improve  
24 our meetings. So one of the things that you picked up  
25 when you came in was a feedback form. We would

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 appreciate it if at the end of the meeting if you would  
2 fill it out and drop it off and leave it with us today.  
3 But if you want to think about it a little bit and give  
4 your comments later, you can send it in. The postage  
5 is free, but we really would like you to have feedback.  
6 Comments on any of the logistics, -- any questions  
7 there?

8 (No audible response)

9 MR. BURTON: All right, so let's get  
10 started. Let me introduce to you some of the folks from  
11 the NRC who are here today. First I will introduce Ms.  
12 Carmen Fells. Ms. Fells serves as the lead Project  
13 Manager overseeing the staff's environmental review  
14 and development of the [DSEIS]. We also have Mr. Tom  
15 Hartman, the Senior Resident Inspector at Callaway.  
16 He serves as the NRC's eyes and ears on a daily basis  
17 at the plant. In addition, we have Mr. Brian Wittick.  
18 He is the Chief of the Projects Branch that manages the  
19 environmental review. And finally we have Ms. Lara  
20 Uselding, in the back. She is the Public Affairs  
21 Officer from our Region IV Office in Dallas, Texas. So  
22 these are some of the folks that we have brought with  
23 us here. And with that I will turn it over to Carmen.

24 MS. FELLS: Thank you Butch.

25 I would like to reiterate that we will be

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 addressing questions related to the license renewal  
2 process. Other questions may be submitted as a  
3 comment. First, we will go over our presentation, then  
4 we will go into questions and answers. Immediately  
5 following, we will go into the comment session.

6 Thank you all for taking the time to come  
7 to this meeting. My name again, is Carmen Fells. I  
8 am the Project Manager for the environmental review of  
9 the Callaway Plant, Unit 1 License Renewal Application.  
10 I hope the information that we provide with this  
11 presentation will help you to understand what we have  
12 done so far, and the role you can play in helping us  
13 make sure that the Final Environmental Impact Statement  
14 is accurate and complete. However I would like to  
15 emphasize that the environmental review is not yet  
16 complete.

17 So now I will start off by briefly going  
18 over the agenda for today's presentation.

19 OVERVIEW

20 I will discuss the NRC's regulatory role.  
21 The preliminary findings of our environmental review  
22 which address the impacts associated with extending the  
23 operating license for Callaway for an additional twenty  
24 years. I will also present the current schedule for  
25 the remainder of the environmental review and how you

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 can submit comments outside of this meeting.

2 At the end of the presentation there will  
3 be time for questions and answers pertaining to the  
4 environmental review process. And most importantly,  
5 time for you to present your comments on the Draft  
6 Supplemental Environmental Impact Statement or SEIS.  
7 NRC'S REGULATORY OVERSIGHT

8 The NRC was established to regulate  
9 civilian use of nuclear materials, including  
10 facilities producing electric power. The NRC conducts  
11 license renewal reviews for plants whose owners wish  
12 to operate them beyond their initial licensing period.  
13 The NRC license renewal review addresses safety issues  
14 related to managing the effects of aging and  
15 environmental issues related to an additional twenty  
16 years of operation. In all aspects of the NRC's  
17 regulations our mission is three-fold, to ensure  
18 adequate protection of public health and safety; to  
19 promote common defense and security and to protect the  
20 environment.

21 ENVIRONMENTAL REVIEW

22 We are here today to discuss the potential  
23 site-specific impacts of license renewal for the  
24 Callaway Plant, Unit 1. The Generic Environmental  
25 Impact Statement or the GEIS examines the possible

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701



1 environmental impacts that could occur as a result of  
2 renewing licenses of individual nuclear power plants  
3 under 10 CFR, Part 54. The GEIS, to the extent  
4 possible, establishes the bounds and significance of  
5 these potential impacts. The analysis in the GEIS  
6 encompasses all operating light water and power  
7 reactors. For each type of environmental impact the  
8 GEIS establishes generic findings covering as many  
9 plants as possible. For some environmental issues  
10 the GEIS found that a generic evaluation was not  
11 sufficient and that a plant-specific analysis was  
12 required.

13 The site-specific findings for Callaway  
14 are contained in the Draft Supplemental Environmental  
15 Impact Statement published in February of this year.  
16 This document contains analyses of all applicable  
17 site-specific issues, as well as a review of issues  
18 covered by the GEIS to determine whether the  
19 conclusions in the GEIS are valid for Callaway. In  
20 this process the NRC staff also reviews the  
21 environmental impacts of potential power generation  
22 alternatives to license renewal to determine whether  
23 the impacts expected from license renewals are  
24 unreasonable.

25 For each environmental issue identified an

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 impact level is defined. The NRC's standard of  
2 significance for impacts was established through the  
3 White House Council of Environmental Quality or CEQ's  
4 terminology for significance.

#### 5 HOW IMPACTS ARE QUANTIFIED

6 The NRC established three levels of  
7 significance for potential impacts, SMALL, MODERATE  
8 and LARGE, as defined on the slide.

9 For a SMALL impact the effects are not  
10 detectable or are so minor that they will neither  
11 destabilize nor noticeably alter any important  
12 attribute of the resource. For a MODERATE impact the  
13 effects are sufficient to alter noticeably, but not to  
14 destabilize important attributes of the resource. And  
15 for a LARGE impact the effects are clearly noticeable  
16 and are sufficient to destabilize important attributes  
17 of the resource.

#### 18 SITE-SPECIFIC ENVIRONMENTAL REVIEW

#### 19 OF CALLAWAY LICENSE RENEWAL

20 This slide lists the site-specific issues  
21 the NRC staff reviewed for the continued operation of  
22 Callaway during the proposed license renewal period.

23 Overall the direct and indirect impacts  
24 for license renewal on all of these issues were found  
25 to be SMALL, which means the effects are not detectable

### NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 or are so minor that they will neither destabilize nor  
2 noticeably alter any important attribute of the  
3 resource.

#### 4 CUMULATIVE IMPACTS

5 This slide provides a summary of our  
6 findings with respect to cumulative impacts associated  
7 with Callaway.

8 Cumulative impacts include the effects on  
9 the environment from other past, present or reasonably  
10 foreseeable future human actions. These effects not  
11 only include the operation of Callaway, but also  
12 impacts from activities unrelated to Callaway, such as  
13 future urbanization, other energy producing facilities  
14 in the area and climate change.

15 Past actions are those related to the  
16 resources at the time of the power plant licensing and  
17 construction.

18 Present actions are those related to the  
19 resources at the time of current operation of the power  
20 plant. And future actions are considered to be those  
21 that are reasonably foreseeable through the end of the  
22 plant operation, including the period of extended  
23 operations.

24 Therefore, the analysis considers  
25 potential impacts through the end of the current

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 license term, as well as the twenty year renewal license  
2 term. While the level of impact due to direct and  
3 indirect impacts of Callaway on aquatic and terrestrial  
4 resources are SMALL, the cumulative impacts when  
5 combined with all other sources, such as increased  
6 urbanization and climate change were SMALL to MODERATE  
7 for terrestrial resources and LARGE for aquatic  
8 resources. In other areas considered the staff  
9 preliminary concluded that the impact was SMALL.

#### 10 ALTERNATIVES

11 The National Environmental Policy Act or  
12 NEPA mandates that each Environmental Impact Statement  
13 consider alternatives to any proposed major federal  
14 action. A major step in determining whether license  
15 renewal is reasonable or not, is comparing the likely  
16 impact of continued operations of a nuclear power plant  
17 with the likely impacts of alternative means of power  
18 generation.

19 Alternatives must provide an option that  
20 allows for the power generation capability beyond the  
21 term of the current nuclear power plant operating  
22 license to meet future system generating needs. In the  
23 Draft Supplement NRC staff initially considered  
24 fifteen different alternatives. After this initial  
25 consideration the staff then chose the most likely and

#### NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 analyzed these in depth.

2 The NRC staff considered what would happen  
3 if no action was taken and Callaway shuts down at the  
4 end of its current license without a specific  
5 replacement alternative. This alternative would not  
6 provide power generation capacity. Nor would it meet  
7 the needs currently met by Callaway.

8 PRELIMINARY CONCLUSION

9 The NRC's preliminary conclusion is that  
10 the environmental impacts of the renewal of the  
11 operating licenses from Callaway would be smaller than  
12 those feasible and commercially viable alternatives.  
13 The no action alternative would have SMALL  
14 environmental impact in most areas, with the exception  
15 of socioeconomic impacts which would be SMALL to  
16 MODERATE. Continued operation would have SMALL  
17 environmental impacts in all areas. The staff  
18 concluded that continued operation of Callaway is the  
19 environmentally preferred alternative.

20 Based on our review of likely  
21 environmental impacts from license renewal, as well as  
22 potential environmental impacts of alternatives to  
23 license renewal, the NRC's staff's preliminary  
24 recommendation in the Draft SEIS is that the adverse  
25 environmental impacts of license renewal for Callaway

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 are not great enough to deny the option of license  
2 renewal for energy-planning decision-makers.

3 WASTE CONFIDENCE RULEMAKING

4 For a timeframe after the end of the  
5 license term for operation of a nuclear reactor which  
6 is beyond the twenty year period of extended  
7 operations, and before disposal in a repository, the  
8 NRC addresses the continued storage of spent nuclear  
9 fuel or used fuel, in the Waste Confidence Decision and  
10 Rule.

11 Previous license renewal Supplemental  
12 EIS(s) noted that the environmental impacts of  
13 temporary storage of the nuclear fuel for the period  
14 following the reactor operating license term were  
15 addressed by this rule.

16 This Draft Supplemental EIS does not  
17 discuss potential environmental impacts of storing  
18 spent fuel for an extended period after the plant shuts  
19 down, that issue will be addressed in the NRC's Waste  
20 Confidence Generic Environmental Impact Statement and  
21 Rule.

22 The Draft Rule and GEIS were issued in the  
23 fall of 2013, and the public had the opportunity to  
24 provide comments. The Final Rule and the GEIS are  
25 expected to be issued in the fall of 2014. Additional

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 information on the Waste Confidence Rule and the GEIS  
2 can be found on the NRC's public website accurately  
3 listed on the slide.

4 In August of 2012 the Commission decided  
5 that the Agency would not issue licenses dependent upon  
6 the Waste Confidence Decision until the Waste  
7 Confidence Rulemaking is completed. However, the  
8 Commission directed the staff to proceed with licensing  
9 reviews and proceedings.

10 If the results of the Waste Confidence GEIS  
11 and Rule identify information that impacts the analysis  
12 in the Supplemental EIS for Callaway, the NRC staff will  
13 perform the appropriate review for those issues and may  
14 supplement the SEIS before the NRC makes a final  
15 licensing decision as to whether or not to renew  
16 Callaway's license.

17 If no changes are required the NRC staff  
18 will base its decision on the Final Supplemental EIS,  
19 the Waste Confidence EIS and Rule, regional inspections  
20 and the Safety Evaluation Report.

#### 21 ENVIRONMENTAL REVIEW MILESTONES

22 I would like to reemphasize that the  
23 environmental review is not yet complete. Your  
24 comments today and all written comments received by the  
25 end of the comment period on April 7th will be

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 considered by the NRC staff as we develop a Final SEIS  
2 which we currently plan to issue in November of 2014.  
3 Those comments that are within the scope of the  
4 environmental review and provide new and significant  
5 information can help to change the staff's findings.

6 The Final SEIS will contain staff's final  
7 recommendation on the acceptability of license renewal  
8 based on the work we have already performed and any new  
9 and significant information we receive in the form of  
10 comments during the comment period.

#### 11 ADDITIONAL INFORMATION

12 As many of you know I am the primary contact  
13 for the environmental review. John Daily is the  
14 primary contact for the safety review.

15 Copies of the Draft SEIS are available on  
16 CD in the back, to the left, and a few hardcopies are  
17 also available here. In addition, the Callaway County  
18 Public Library has agreed to make a hardcopy available  
19 for review. You can also find electronic copies of the  
20 Draft SEIS, along with other information about the  
21 Callaway's License Renewal Review online.

#### 22 SUBMITTING COMMENTS AFTER THE MEETING

23 The NRC staff will address written  
24 comments in the same way we address spoken comments  
25 received today. You can submit written comments

### NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701



1 either online or via conventional mail. To submit  
2 written comments online visit the website  
3 regulations.gov., and search for docket ID:  
4 nrc-2012-0001. And if you have written comments today  
5 you may give them to any NRC staff member.

6 This concludes my presentation and I will  
7 turn it back over to Butch.

8 QUESTION & ANSWER SESSION

9 MR. BURTON: All right, thanks Carmen.  
10 That concludes the presentation of the staff's overview  
11 of the license renewal process, as well as some of the  
12 findings that are documented in the [DSEIS].

13 What we wanted to do next was to open it  
14 up for questions that you may have on the process,  
15 anything you've heard in terms of the findings. And  
16 we will take a few minutes to do that and then get into  
17 the formal comment period where you can actually  
18 provide specific comments on the [DSEIS].

19 So with that is there anybody with any  
20 questions on anything you've heard today or any other  
21 issues?

22 (One hand raised.)

23 MR. BURTON: Okay, please. Again, you  
24 can come up to the podium or I can bring you the  
25 handheld. Please state your name and if you have an

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 affiliation, and then state your question.

2 MR. SMITH: My name is Ed Smith. I am the  
3 Safe Energy Director at the Missouri Coalition for the  
4 Environment.

5 The question that we first have is that our  
6 organization, along with thirty-three other  
7 organizations from around the country submitted  
8 petitions to the Nuclear Regulatory Commission on  
9 February 18, 2014, regarding the spent fuel pools and  
10 nuclear reactors. Specifically citing a study  
11 conducted by the NRC at the Peach Bottom Nuclear Reactor  
12 that said even a small fire at a reactor pool could be  
13 roughly 9,000 square miles on an average, and displace  
14 4 million people. And I am curious if the Nuclear  
15 Regulatory Commission can offer an update on our  
16 Rulemaking Petition? That's the first question. I  
17 brought the petition with me as well so that you guys  
18 can have it.

19 MR. BURTON: In response, okay, you know  
20 we did not bring the entire staff. We really brought  
21 the folks here who were really focused on the [DSEIS].  
22 So I don't think we have the personnel here who can  
23 directly address your question, -- Mr. Smith, right?

24 MR. SMITH: Uh-huh (positive utterance).

25 MR. BURTON: But what I will say, -- and

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 this is true for anybody else who has questions that  
2 we may not have the folks here who can answer them  
3 directly, what we'll do is we'll get your contact  
4 information and we will make sure that we do get an  
5 answer for you in terms of the status of that.

6 MR. SMITH: All right. Well that takes  
7 care of a few more questions that I had.

8 MS. FELLOWS: We have also provided  
9 literature addressing FAQ(s) on the Waste Confidence  
10 Decision. You can find them in the back.

11 MR. SMITH: Yeah. Well this is separate  
12 from Waste Confidence.

13 This is a question. We are a very small  
14 organization. We don't have the resources that our  
15 utility here does. It is our understanding that the  
16 Draft Supplemental License Renewal EIS for Callaway did  
17 not address the environmental impacts of storing spent  
18 fuel high-density storage pools during the license  
19 renewal term. What assurances can you give us that the  
20 NRC has taken a hard look, as required by the National  
21 Environmental Policy Act, and then that the  
22 environmental risks of a pool fire at Callaway 1, or  
23 measures to avoid or mitigate those risks?

24 MR. WITTICK: My name is Brian Wittick. I  
25 am a Branch Chief for the License Renewal Project

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 Management. The spent fuel pool, -- there is a number  
2 of different issues that are being addressed here.  
3 Spent fuel pool safety is a little bit different than  
4 the Waste Confidence issue. It's just a little bit  
5 different from the license renewal process. The spent  
6 fuel pools, -- there is currently two papers before the  
7 Commission to, -- SPF (phonetic) papers, that have  
8 addressed spent fuel pool safety, being that, -- or a  
9 current means of storage of spent fuel in either the  
10 spent fuel pools or in the ISFSI; it's a safe means of  
11 storage. The papers that are before the Commission are  
12 currently in process with the Commission. And as a  
13 consequence, -- I guess the primary message is that this  
14 is an ongoing operating reactor issue that is not  
15 specific to license renewal.

16 MR. SMITH: So the spent nuclear fuel  
17 pool's integrity is not an issue during the license  
18 renewal?

19 MR. WITTICK: The spent fuel pool  
20 integrity is an issue during the period of operating  
21 reactor safety for Callaway, whether it's in the near  
22 term or in the long-term, correct.

23 MR. BURTON: I think one thing that I did  
24 want to, -- I can't speak specifically to that, but I  
25 think I can talk in general terms about some of the

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 underlying regulatory tenets that underline the  
2 License Renewal Program. And one of the things that  
3 we try to do is we are committed to whatever the current  
4 licensing basis is of the plant is going to be continued  
5 on into that period of extended operation. So ongoing  
6 issues, of which this is one, and there are others,  
7 ultimately our current processes are going to  
8 disposition those issues. And if there are changes  
9 that ultimately are going to be required, plants are  
10 going to institute whatever those new requirements may  
11 be. So some of the insights with regard to the spent  
12 fuel and stuff, as those get disposition the fixes will  
13 become a part of all the plant's current licensing  
14 bases. And as they go into the period of extended  
15 operations those will be maintained, again, for a  
16 license renewal with an emphasis on aging mechanisms  
17 and management of aging degradations.

18 So I can say at a very high level that  
19 anything that comes out of some of the spent fuel issues  
20 will be vetted in disposition requirements as is  
21 appropriate and the Commission decides to implement  
22 will become a part of the current licensing basis and  
23 carry-forward. So in that respect that is generally  
24 how we do things. I don't know if that helps  
25 specifically with your question, but if you have any, --

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1                   MR. SMITH: I've got one more. Section  
2 5.3 of the Draft's severe accidents, cites the 1996 GEIS  
3 as the basis for the NRC's decision that the probability  
4 weighted consequences of the atmospheric release  
5 fallout onto open bodies of water releases to the ground  
6 or the societal and economic impacts from severe  
7 accidents are SMALL for all plants. However,  
8 alternatives to mitigate severe accidents must be  
9 considered for all plants that have not considered such  
10 alternatives. It goes on to say that the staff ID'd  
11 these issues and there is no real environmental or human  
12 health threat if the license is extended. I guess I'm  
13 just curious why is the NRC using the GEIS from 1996  
14 pre-Fukushima, and not using more updated, and more  
15 accurate risk-analysis for, -- it's my understanding  
16 that there's a Draft GEIS done in 2009, and then I  
17 believe it was made official in 2013. Why then, -- does  
18 the NRC plan on looking back at this through the lens  
19 of what will be more conservative issues related to the  
20 ongoing operation of the Callaway Nuclear Reactor?

21                   MR. BURTON: Anyone want to address that?

22                   MS. FELLOWS: We used the 2013 GEIS to update  
23 our current SEIS. I'm not sure if you want to submit  
24 that as a comment on the docket so that we may address  
25 it?

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 MR. SMITH: Yeah. I came here today as  
2 more of an opportunity to ask questions of the  
3 regulators; to submit an online form later. But yeah,  
4 clarity, -- so you are saying right now that the NRC  
5 is using the 2013 GEIS? Will that be changed in the  
6 documents moving forward? And will you reevaluate all  
7 the information Ameren submitted based on the '96 GEIS?

8 MS. FELLOWS: Well we have already taken the  
9 information that Ameren submitted and updated this SEIS  
10 where it needed to be updated using the most current  
11 information. If this section needed to be updated with  
12 the new GEIS information and has not yet been updated,  
13 then it should be updated in the final SEIS. If it has  
14 not been updated, then the information from the former  
15 GEIS is still valid and relevant to use in this SEIS.  
16 So it might be better to take this as a comment and then  
17 have our Severe Accident Mitigation Alternative staff  
18 address it.

19 MR. SMITH: All right. I think that's it.  
20 Thank you.

21 MR. BURTON: Thank you. Other folks who  
22 have any questions on the license renewal process and  
23 any of the findings that came out of the  
24 [DSEIS], -- anyone?

25 (No audible response)

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 MR. BURTON: All right. We appreciate  
2 the questions, Mr. Smith. All right, so if there are  
3 no more questions on Carmen's presentation I guess  
4 we'll go right into the formal comments on the [DSEIS].

5 PUBLIC COMMENTS

6 MR. BURTON: When you came to register you  
7 guys filled out little blue and yellow cards.  
8 Hopefully everyone has filled out a blue card, but if  
9 any of you wanted to actually come up and provide  
10 comments on the DSEIS we asked you to fill out one of  
11 these little yellow cards. At this point, if there is  
12 anyone who would like to make a comment who did not fill  
13 one of these out, there are a couple of things you can  
14 do. You can go back to the registration table now and  
15 fill it out or what I'll do is I'll ask those who did  
16 fill it out already to come up and provide their  
17 comments and then once those are done if anyone else  
18 wants to that did not actually fill out a card can come  
19 up at that point.

20 What I try to do, -- and I didn't get very  
21 many, so I think we can generally take our time  
22 expressing your comments. A lot of times if we have  
23 a lot of comments we try to put a timeframe on it, but  
24 since I just have a few we will kind of let you take  
25 your time. So what I will do is I will call up the

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701



1 persons who have come to provide their comments, and  
2 I'll give the names of the next couple of people so  
3 you'll know when you are on deck.

4 Okay, so let's start with Ms. Rebecca  
5 Wright, if you want to come up. And after Ms. Wright  
6 we'll have Henry Robertson. And after Mr. Robertson  
7 we'll have Kay Drey; I hope I'm pronouncing it right.

8 MS. FELLIS: Drey.

9 MR. BURTON: Drey. Forgive me if I  
10 mispronounced it. You can come up to the podium or if  
11 you prefer for me to bring you the mic I can do that  
12 too.

13 MS. WRIGHT: My name is Rebecca Wright and  
14 I live in St. Louis, Missouri. I have family members  
15 living in the Fulton area, and some in the Columbia  
16 area, and I used to live in this area, so I have  
17 concerns.

18 And two of my concerns are about the  
19 relicensing of the Callaway Plant. I have questions  
20 about potential large catastrophes that are considered  
21 so unlikely that they are not planned for or not even  
22 asked about. And actually one of them, there's  
23 no, -- you know we have seen it happen, but not to the  
24 extent that it would be called a catastrophic. And  
25 that's loss of cooling water from the water in-take

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 structure of the Missouri River. And I'm not aware  
2 that we have, -- the Callaway Plant has a functioning  
3 on-site pond that is able to sustain the cooling of the  
4 reactor and the spent fuel pool.

5 But in 2011 we all watched the waters rise  
6 in the flood, and six of the dams on the Missouri River,  
7 from the Fort Peck Dam in Montana, to the Gavins Point  
8 Dam in South Dakota, each hold massive amounts of water  
9 in their reservoirs, but the dams are old and the  
10 reservoirs are really old. And stress could cause them  
11 to liquefy or the water on top of the dams, and the way  
12 the snow is when it opened, they could have failed and  
13 eroded, -- just totally eroded in the containment. And  
14 the failure of the Fort Peck Dam in Montana could have  
15 set off a Domino effect creating like a tsunami down  
16 the Missouri River, moving out and flooding everything  
17 in its path. And the water in-take, or the cooling  
18 water in-take at the Callaway Plant could have been  
19 stripped away or at least over top, cutting off the  
20 electricity and functioning of the pumps and causing  
21 the loss of cooling water in the reactor core and could  
22 result in a meltdown and also cutting off the cooling  
23 water to the spent fuel pool. And the water is likely  
24 to sit there and remain there for a long period of time,  
25 kind of creating an embarrassment of fixes for them.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 So I think that's a really major concern and I'm not  
2 sure that it is addressed. And also, in case of a  
3 drought the water level could be very low and the water  
4 could be too warm to effectively cool the reactor.

5 And then another concern of mine is the  
6 failure of the electric power grid. And it could be  
7 from any reason, and it could be you know massive or  
8 regional. But one concern that has been raised is that  
9 scientists have warned about the possible failure of  
10 the Hydro power grid due to massive solar flares. And  
11 there have been solar flares historically. And one  
12 was on September 1st in 1859 before there was much of  
13 an electric grid and it was called the Carrington Event.  
14 And it set telegraph stations on fire and the networks  
15 experienced major outages. A similar event today  
16 could have catastrophic consequences, which is  
17 probably going to take, -- scientists have said the  
18 recovery could take an estimated four to ten years.  
19 And that's according to a report from the National  
20 Research Council. And I don't think there has ever  
21 been any kind of, -- I've seen the question in the  
22 literature, but I don't think that any EIS has ever  
23 addressed this for the Callaway Plant or anything of  
24 this kind. For as long as it would take to restore the  
25 entire power if the entire power grid failed such loss

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 of power and cooling water may result not only in the  
2 amount of the reactor coolant and loss of the cooling  
3 water in the spent fuel pools, it could lead to  
4 propagate a zirconium primer fire and result in the use  
5 of large amounts of radioactive materials. So, I guess  
6 I would like to know if there is any remedy other than  
7 not having nuclear power, which is a good plan?

8 And then I have concerns about finances  
9 that have already manifested in various regions of the  
10 United States and other countries with their nuclear  
11 power plants. Several financial predictors indicate  
12 that nuclear power plants are becoming too expensive  
13 to operate because of costly repairs. And some  
14 companies operating nuclear plants decided to try to  
15 recover their costs from customers or are begging for  
16 other subsidies. I've seen huge ads in the Wall Street  
17 Journal, and I've seen, -- even I guess the Callaway  
18 Plant, they are trying to do what for a new plant would  
19 be the cost of construction work in progress just to  
20 kind of put in repair work, attaching it to the repairs  
21 bills.

22 So other plants are on the verge of  
23 shutting down. Other financial challenges arise from  
24 a cheaper form and supply of electricity from renewable  
25 or fossil fuels, such as gas. We think that like within

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 the next twenty years renewable energy will dominate  
2 as much as it has in Germany or Portugal. At least  
3 Germany is shutting down some of its plants and  
4 replacing that with renewables, because of global  
5 warming and the fear of nuclear power in the Fukushima  
6 province. There is also a chance that another accident  
7 at a nuclear plant could make nuclear power reviled more  
8 than it already is to some people. The older this  
9 generation of nuclear power plants become, the more  
10 likely they will run into failure, or the continued  
11 radioactive waste problems and the cost of storing them  
12 forever will culminate and we'll simply just stop  
13 making and denigrating these nuclear power plants.  
14 Thank you.

15 MR. BURTON: Thank you, Ms. Wright. Next  
16 we will have Mr. Robertson, followed by Kay, -- and I  
17 guess it's Kay Drey. I apologize for the earlier  
18 miscommunication. And then after that we'll have Ed  
19 Smith.

20 MR. ROBERTSON: Thank you. My name is  
21 Harry Robertson. I am an Attorney with the Great  
22 Rivers Environmental Law Center in St. Louis.

23 I want to echo concerns about the spent fuel  
24 storage problem. And we're told that Ameren will run  
25 out of storage capacity by 2020, but they are expected

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 to build an interim storage facility, yet they have no  
2 current license to do that. It would seem important  
3 to know what exactly this will be. I would  
4 assume, -- and I'm being told, that it includes dry-cast  
5 storage, but when will it be done? 2020 is not far off.  
6 What will it cost? All those questions are not  
7 addressed in the DESIS.

8 And I would like to make some comments on  
9 the way the [DSEIS] dismisses certain energy generation  
10 alternatives. My peer phrased this as a question  
11 earlier, but why does the [DSEIS] only consider wind  
12 energy that is located in Missouri? While there is  
13 wind energy in Missouri the investor-owned utilities,  
14 like Ameren Missouri don't take any of that wind.  
15 They get their wind energy from Kansas and Iowa. And  
16 that is important because a graphically dispersed wind  
17 is the more reliable wind. However the [DSEIS] does  
18 not show that the State of Iowa presently gets almost  
19 25 percent total electricity from wind. And so I don't  
20 think it can be said that it is not a practical  
21 alternative.

22 I see no indication in the [DSEIS] that the  
23 NRC is aware of a project like Clean Line Energy  
24 Partners, which is currently before the Missouri Public  
25 Service Commission to build a direct current

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 transmission line to carry wind energy from Kansas,  
2 across Missouri, to Illinois and Indiana. With a  
3 possibility, -- and not a certainty by any means, but  
4 a possibility of dropping 500 megawatts of wind energy  
5 off in the Ameren Missouri service territory which  
6 would greatly increase Ameren's wind energy capacity.

7 The alternatives of the [DSEIS] consider  
8 a strictly baseload generation from coal, nuclear and  
9 natural gas. Well baseload, -- some of you were  
10 talking about the missing baseload. What exactly is  
11 baseload? The true source of reliability is not  
12 individual power plants like Callaway 1, or any other,  
13 it's the availability of energy on the coal  
14 transmission grid. And certainly you are aware that  
15 nuclear plants frequently have both planned and  
16 unplanned outages. There are refueling outages every  
17 eighteen months at Callaway 1. And in its lifetime  
18 Callaway has had at least thirty-nine forced outages  
19 lasting from a few hours to about a month and a half.

20 In 2011 and '12 there were sixty-seven  
21 reactors worldwide, including of course, Fukushima  
22 Daichi, and 18 percent of all the commercial light and  
23 power reactors in the world had extended unplanned  
24 outages. And at times like these it's electricity that  
25 is available on the grid that picks up the slack. And

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 you cannot say that an individual power plant is crucial  
2 to reliability.

3 Another alternative that is slighted by  
4 the [DSEIS] is demand-side management, which means  
5 utility energy efficiency programs. Ameren Missouri  
6 is running some of these plans right now, but they  
7 minimize the effectiveness of demand-side management  
8 in substituting for generating capacity.

9 Missouri has a law called the Missouri Energy  
10 Efficiency Investment Act that obligates and regulates  
11 utilities like Ameren to achieve all cost-effective  
12 demand-side savings. And according to the Public  
13 Service Commission's rules if they meet these goals  
14 then by the year 2020 they will be saving 9.9 percent  
15 of the total annual energy replaced by efficiency. And  
16 that will continue to grow by 1.9 percent per year after  
17 that, Ameren, -- well, at least by Ameren's figures from  
18 the Integrated Resource Plan for how much capacity it  
19 thinks can be replaced by demand-side management. And  
20 yet, in the proceedings that I am aware of from the  
21 Missouri Public Service Commission Ameren has been  
22 severely criticized by most of the parties, including  
23 PSC staff and the Office of Public Council, the consumer  
24 watchdog, that they have severely understated the  
25 potential for saving energy in Missouri by demand-side

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701



1 management compared to studies that have been done in  
2 other states, and the results that have actually been  
3 achieved in other states, and in potential studies with  
4 other Missouri utilities. So I think that wind energy  
5 and demand-side management deserve consideration as an  
6 alternative to baseload generation for coal.

7 Just briefly I want to comment that the  
8 cumulative effects on aquatic resources are rated  
9 LARGE. The Missouri River is called a degraded  
10 ecosystem close to or past the point of irreparable  
11 damage, and yet nothing appears to be done about that.

12 I also wondered, -- I looked at the Final  
13 Environmental Report by Ameren, and attached to  
14 that, -- Attachment E, are helpful letters from the  
15 Missouri Department of Natural Resources to Ameren  
16 concerning the possibility of thermophilic pathogens  
17 entering the Missouri River in cooling water  
18 discharges. And then the DNR, -- Missouri DNR says  
19 that it cannot rule out the presence of these pathogens  
20 nor could it "conclude that this section of the Missouri  
21 River does not pose a significant risk of waterborne  
22 disease". So I think further assessment of that issue  
23 is also warranted.

24 And I will conclude my comments there and  
25 I'll offer a copy.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 MR. BURTON: Thank you, Mr. Robertson.  
2 Next we are going to have Kay Drey, followed by Ed Smith,  
3 and then Pamela Todorovich.

4 MS. DREY: My name is Kay Drey and I live  
5 at 515 West Pointe in University City, Missouri.

6 Thank you for this opportunity to submit  
7 comments to the Nuclear Regulatory Commission  
8 regarding Ameren's request to extend its operating  
9 license for the Callaway Nuclear Power Plant, and to  
10 speak about the Generic EIS at Callaway. The effort  
11 to have Ameren achieve another, -- or be granted another  
12 twenty years is to me, very disturbing. I am here to  
13 say that I hope the NRC will deny that request.

14 The first time I spoke publicly against  
15 nuclear power was forty years ago. I am now eighty  
16 years old and have spent much of the second half of my  
17 life reading about nuclear power and radioactive waste,  
18 and writing and speaking about their hazards. So true  
19 to form I am here today to urge the Nuclear Regulatory  
20 Commission to deny Ameren's request to extend the  
21 Callaway Plant's forty year operating license for  
22 another twenty years. I have had to delay my effort  
23 to review the NRC's 450 page Generic Environmental  
24 Statement on Callaway because I, and many other St.  
25 Louisans have been working hard instead to give the U.S.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 Army Corps of Engineers the responsibility for the  
2 radioactive waste that was illegally dumped in the West  
3 Lake Landfill in St. Louis County. We need the Corps  
4 to excavate and export some of the oldest radioactive  
5 waste of the atomic age. The landfill is located in  
6 the flood plain of the flood-prone Missouri River  
7 upstream from two of St. Louis' major drinking water  
8 treatment plants. As you may have read in the Wall  
9 Street Journal those historic wastes are frighteningly  
10 close to what has been called a "subterranean  
11 smoldering event," that is in other words a fire.

12 To return to the subject of today's hearing  
13 I will list only five of the topics that I believe were  
14 inadequately discussed, -- addressed in the Generic EIS  
15 supplement regarding Callaway. And I hope the NRC will  
16 deny permission to Ameren to prolong the operation of  
17 the Callaway reactor for another twenty years.

18 I believe that there is inadequate  
19 attention to the potential for a very huge accident,  
20 the kinds that our world has seen in Fukushima and  
21 elsewhere. I am still concerned about problems during  
22 construction of the Callaway Plant. There were  
23 defective embedded steel plates with studs that just  
24 fell off. They are supposed to be able to stay on to  
25 the embedded plates even falling from an airplane, and

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 yet they fell off of the truss and so forth. And  
2 although the NRC discounted the significance of these  
3 embedded plates and the defective stud welding, I think  
4 this is still a huge concern. They have even eroded  
5 so far that one of the floors have collapsed. And I'm  
6 also still concerned about the honeycomb they found in  
7 the base mat. Due to mistakes in the construction of  
8 the base mat there were huge holes in the base mat of  
9 the reactor containment building.

10 One of the concerns I have most about the  
11 Callaway Plant, and especially potentially extending  
12 the operating duration is exposure to workers to  
13 radiation. And the longer the plant operates the more  
14 crud; which is one of the earliest technical words I  
15 learned which has to do with the corrosion of products  
16 that build up in pipes and other structures, and the  
17 workers are getting badly exposed to high levels of  
18 radiation. And I think that should be dealt with in  
19 the Generis EIS.

20 I think also the fact that Callaway and  
21 other reactors in this country, -- but also  
22 specifically Callaway, is using higher burn-up fuel.  
23 And the fuel is being kept in a spent fuel pool at  
24 Callaway. And the pool is just being crowded with  
25 more, and more, and more irradiated fuel products. And

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 there is still no permanent disposal site in the United  
2 States for the fuel, so it is going to have to stay at  
3 Callaway as far as we are concerned. Or maybe they will  
4 send it, as they keep trying to, to the Native American  
5 Tribal lands. But the spent fuel pool is vastly  
6 overcrowded and they are using fuel that has a higher  
7 concentration of Uranium-235. This higher burn-up  
8 fuel will lead to greater degradation of the [plating],  
9 the tubing that holds the fuel pellets. And because  
10 of the higher degradation and the [plating] that they  
11 have discovered there were higher releases of  
12 radioactive isotopes into the liquid effluent of  
13 gaseous releases.

14 And I guess my number one concern about  
15 nuclear power plants is the routine releases of  
16 radioactive gases into the air and radioactive  
17 materials into the water, that in our case here in  
18 Missouri is dumped into the Missouri River, and also  
19 in streams in St. Louis and so forth. And I think that  
20 the fact that Union Electric or Missouri Ameren is  
21 seeking to operate the plant beyond the initial forty  
22 years, for another twenty years, means more gaseous  
23 releases and routine liquid releases will happen. And  
24 I think that is really simply unacceptable.

25 So I think that's the conclusion of what

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 I have to say, but I also brought a statement of a friend  
2 that was not able to come. Do you want me to read that  
3 now?

4 MR. BURTON: Sure.

5 MS. FELLOWS: You can read it or submit the  
6 document.

7 MS. DREY: I do want to read it.

8 MS. FELLOWS: Okay, go ahead.

9 MS. DREY: But if want me to do it after  
10 everyone else has spoken, --

11 MR. BURTON: You can go right ahead.

12 MS. FELLOWS: You might want to state the  
13 person's name.

14 MS. DREY: Yeah. She's not here and I  
15 will submit her typed comments. She said my name is  
16 Arlene Sandler (phonetic). I live at 6947 Kirby Avenue  
17 in University City, Missouri and I am unable to attend  
18 this hearing today, although I am a complete cynic about  
19 the value of citizen testimony in a process that has  
20 historically been rubberstamped by the Nuclear  
21 Regulatory Commission with its industry-friendly  
22 regulations. I felt that I had to make a few comments  
23 about a technology that I have proposed for decades.

24 During my involvement with the Missouri  
25 Coalition for the Environment's efforts to compel Union

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 Electric to provide increased monitoring for  
2 radioactive sludge from the Callaway Plant back in the  
3 1980(s) I, Arlene Sandler, spent a lot of  
4 time, -- excuse me, reading Incident Reports which were  
5 required, --

6 MS. FELLO: Would you like a bottle of  
7 water.

8 MS. DREY: I have water in the car, but  
9 that doesn't help. I'm sorry. That's great.

10 MR. BURTON: Do you need to take a break  
11 or, --

12 MS. DREY: That would be good if you don't  
13 mind, as long as she's bringing water. That's great.  
14 Thank you.

15 I might add that Arlene Sandler, who has  
16 written this statement, is a member of the Board, and  
17 has been for many years, of the Missouri Coalition for  
18 the Environment. But to continue her statement,  
19 during my involvement with the Missouri Coalition for  
20 the Environment's efforts to compel Union Electric to  
21 provide increased monitoring of radioactive sludge  
22 from the Callaway Plant back in the 1980(s), I, Arlene  
23 Sandler, spent a lot of time reading Incident Reports  
24 which were required published announcements of  
25 unexpected events at nuclear power plants. And as I

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 read through many, many pages of examples of human error  
2 and equipment malfunctions at nuclear power plants all  
3 over the country I realized then that nuclear power was  
4 a very risky way to generate electricity, and I am even  
5 more convinced of that today.

6 We have been very lucky so far in the United  
7 States, but catastrophic accidents at Chernobyl and  
8 Fukushima have forced people from their homes, caused  
9 deaths, disease and birth defects, and produced  
10 contamination over a broad area. Radioactive water is  
11 still leaking into the Pacific Ocean or Fukushima. And  
12 one article I read reported that it would take one  
13 hundred years to clean up the site of the disaster, and  
14 there have been quite a few near misses. Pick up a  
15 copy of We Almost Lost Detroit, at the library; Arlene  
16 is a retired Librarian.

17 Some concerns and questions about  
18 extending the Callaway license until 2044. (1) The  
19 potential risk of contaminating water. Lake  
20 Thunderbird, Lake Lochaweenno and Canyon Lake are within  
21 a 6 mile radius of the plant. The longest river in  
22 North America in Missouri is 5 miles away. I am  
23 concerned about contamination not only from an  
24 accident, but from routine releases during the daily  
25 operation of the plant for an additional twenty years.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701



1 Her second comment. Risks from an  
2 indepted storage of high level radioactive waste  
3 storage on site. There is no current repository for  
4 spent fuel rods, so all of the rods that have ever been  
5 removed from the Callaway reactor are in a pool which  
6 will be filled to capacity by 2020. Ameren states in  
7 the Callaway Environmental Facts-2011 "Spent nuclear  
8 fuel consists of bundles of fuel rods called fuel  
9 assemblies that have been removed from a nuclear  
10 reactor when it can no longer sustain a nuclear  
11 reaction". But crowded together over time in a pool  
12 filled to capacity with barriers prone to corrosion  
13 those assemblies can start a nuclear chain-reaction.

14 Just how dangerous are these rods? And  
15 this is quoting from Bob Alvarez Institute for Policy  
16 Studies, and this is called Spent Nuclear Fuel Pools  
17 in the U.S.: Reducing the Deadly Risks of Storage.  
18 "Spent fuel rods give off about 1 million rem (10,000  
19 thousand sieverts) of radiation per hour at a distance  
20 of 1 foot has enough radiation to kill people in a matter  
21 of seconds." And I should say that I also have  
22 something that Bob Alvarez wrote that I want to submit  
23 as a part of my statement, if that's okay? I meant to  
24 say that.

25 To continue, Arlene has written, does a

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 specific plan exist right now for the design and the  
2 construction of a new spent fuel pool at Callaway? (3)  
3 It's all about the money. In Appendix F as in Frank,  
4 of this GEIS draft, page F-2, Ameren reports that  
5 "Sixteen potentially cost-beneficial SAMA, Severe  
6 Accident Mitigation Alternatives, will be entered in  
7 Callaway's long-range plan development process for  
8 further consideration". Arlene asks why isn't the  
9 plan for these mitigation alternatives a part of the  
10 relicensing requirements right now? Are there  
11 accident mitigation alternatives that are most costly  
12 and therefore not being considered at all?

13 In its Executive Summary of the Draft the  
14 NRC "Concluded that none of the potentially  
15 cost-beneficial severe accident mitigation  
16 alternatives related to adequately managing the  
17 effects of aging during the period of extended  
18 operation". I don't think she's talking about that.  
19 "Therefore they may not be implemented as part of the  
20 license renewal." What does this mean? Which severe  
21 accident mitigation alternatives would be able to  
22 manage the effects of plant aging? How many additional  
23 sediment retention monitors will be needed as part of  
24 the waste water treatment system if the Callaway  
25 license were extended? What kind of monitoring would

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 you have?

2 (4) Common sense. If there is no  
3 location for the radioactive waste that has been  
4 accumulating at nuclear power plants since they began  
5 generating electricity, why would any rational person  
6 want to continue to create more?

7 Nuclear power has some unique  
8 characteristics that Amory Lovins, Chief Scientist of  
9 the Rocky Mountain Institute describes as follows:  
10 "Nuclear power is the only energy source where mishap  
11 or malice can kill so many people so far away; the only  
12 one whose ingredients can help make and hide nuclear  
13 bombs; the only climate solution that substitutes  
14 proliferation, accident and high level of radioactive  
15 waste dangers."

16 Arlene's final paragraph; I would urge the  
17 NRC not to rubberstamp this operating license request.  
18 Let Callaway's license expire in 2024. Thank you for  
19 the opportunity to comment, Arlene Sandler.

20 MR. BURTON: Thank you, Ms. Drey. I will  
21 say that if you had not told us your age I don't think  
22 any of us would have guessed. Next we are going to have  
23 Ed Smith, followed by Ms. Pamela Todorovich.

24 MR. SMITH: Ed Smith, Missouri Coalition  
25 for the Environment. This is again, from Section 5.3,

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 Severe Accidents and Drafts. It says, "Severe  
2 accidents initiated by external phenomenon's such as  
3 tornadoes, floods, earthquakes, fires and sabotages  
4 have not traditionally been discussed in quantitative  
5 terms in FES(s) and were not specifically considered  
6 for the Callaway site in the GEIS," again, referencing  
7 the 1996 NRC document. "However the GEIS did evaluate  
8 existing impact assessment performed by the NRC and by  
9 the nuclear industry at forty-four nuclear plants in  
10 the United States and concluded that the risk from  
11 beyond design basis earthquakes at existing nuclear  
12 plants is SMALL," small as in all capital letters.  
13 "The GEIS for a license renewal performed a  
14 discretionary analysis of terrorist acts in connection  
15 with license renewals and concluded that the risks from  
16 such acts would be no worse than an endogen release  
17 expected from internally initiated events. In the  
18 GEIS the Commission concludes that the risk from  
19 sabotage and beyond design basis earthquakes in  
20 existing nuclear power plants is SMALL. And  
21 additionally, that the risks from other external events  
22 are adequately addressed by the generic consideration  
23 of internally initiated severe accidents," again  
24 citing the 1996 GEIS, which I haven't revisited that  
25 document recently, but I would imagine the threat of

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 cyber security and cyber terrorism has escalated a bit  
2 1996.

3 "Based on the information in the  
4 GEIS", -- I read a little bit of that earlier so I'll  
5 skip that. "The staff identified no new significant  
6 information related to severe accidents during review  
7 of the Applicant's Environmental Report, the Site Audit  
8 Scoping Process or the evaluation of other available  
9 information. Therefore there are no impacts related  
10 to these issues beyond those discussed in the GEIS."

11 That is what the NRC had to say and here  
12 is what the Coalition of the Environment wrote and will  
13 be submitting later. "The Missouri Coalition of the  
14 Environment believes that spent fuel storage risks are  
15 one of the most serious unaddressed safety  
16 environmental issues facing the NRC today. The  
17 consequences of a pool fire are potentially  
18 catastrophic, affecting millions of people and costing  
19 millions of dollars. There is no excuse from posing  
20 this potential colossal risk on the public," and that's  
21 because we have the Price Anderson Act which caps  
22 utility liability at 21 billion dollars which is paid  
23 for by the nuclear utility customers to begin with.  
24 Taxpayers pay for the rest as most of you already know.  
25 Good luck getting that money from Congress these days.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1           The only reason the risks exist is that the  
2 Government and reactor licensees have not done a good  
3 job of managing the waste generated by reactors. The  
4 volumes of waste piling up in fuel pools at Callaway  
5 and other reactors were never contemplated when these  
6 reactors were issued their original licenses. The  
7 Callaway nuclear reactor for example, has 2,363 fuel  
8 assemblies in its fuel pool. I believe it was  
9 originally licensed for right around 400. And we also  
10 know now that Ameren's going to be moving those out of  
11 its fuel pool.

12           We think the NRC has swept the issue of pool  
13 fires under the rug for far too long, and many other  
14 things, including waste storage. The NRC has never  
15 made a comprehensive analysis of pool fire risks as it  
16 did for reactor accidents with the Severe Accident  
17 Study in NuReg-1150. The imposition of such great risks  
18 on a public without careful study is inexcusable.

19           The Fukushima accident supposedly  
20 inspired the NRC to take a closer look at the problem  
21 in the expedited spent fuel transfer proceeding. But  
22 the Consequence Study the NRC staff turned out in 2013  
23 was extremely inadequate and a complete  
24 disappointment. In spite of its inadequacies however,  
25 the Consequence Study and the cost-benefit analysis

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 that accompanied it, yielded new and significant  
2 information about the risks of pool fires and the  
3 benefits of reducing the density of fuel in the pools.

4 MCE participated in a Rulemaking Petition  
5 submitted February 18, 2014, and resubmitted it again  
6 today to the NRC Commission for context, seeking the  
7 reopening of the license renewal GEIS to consider new  
8 and significant information generated by the NRC's  
9 proceeding on an expedited transfer of spent fuel.

10 In that expedited spent pool transfer  
11 proceeding, the NRC staff found that if even a small  
12 fraction of the inventory of the Peach Bottom reactor  
13 pool was released to the environment in a severe spent  
14 fuel pool accident an average area of 9400 square miles  
15 will be rendered uninhabitable and 4.1 million people  
16 would be displaced over the long term. This  
17 information is new, because no EIS for reactor  
18 licensing, GEIS for reactor relicensing or  
19 environmental assessment for standardization design  
20 certification has specified the size of the area that  
21 could be contaminated or the number of people who could  
22 be displaced for an extended period of time by a  
23 high-density spent fuel pool fire. And high-density  
24 is exactly what we have at the Callaway reactor.

25 The information is significant because it

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 underlines the NRC's conclusion in environmental  
2 studies such as the one being discussed today, for  
3 reactor licensing and relicensing that the impacts of  
4 spent fuel storage during reactor operation are  
5 insignificant. Such widespread contamination and  
6 long-term displacement of people can have enormous  
7 socioeconomic impacts, as witnessed by the effects of  
8 Fukushima; an accident where land contamination has  
9 disrupted the lives of a large number of Japanese  
10 citizens. It is estimated that over 100,000 Japanese  
11 people are still displaced from their homes and  
12 communities. The Japan Times recently cited a report  
13 from local Fukushima prefecture authorities that found  
14 more people have died from stress-related illnesses and  
15 other health-related problems near the nuclear reactor  
16 than who died from the disaster-related injuries.  
17 This is just from the Fukushima prefecture and the areas  
18 around it. It is not from the entirety of this tsunami  
19 disaster. We saw some of these same things I would add  
20 to that, after the [BP] oil disaster in the Gulf of  
21 Mexico.

22 Real world nuclear disasters; surely the  
23 impact on communities surrounding a nuclear reactor are  
24 significant and therefore must be considered by the NRC  
25 in a meaningful way. The Peach Bottom review the NRC

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701



1 acknowledged, -- in the Peach Bottom review the NRC  
2 acknowledged for the first time the potential  
3 consequences of a pool fire severe enough to warrant  
4 mitigation regardless of how low the probability  
5 estimated by the NRC for such an accident. No EIS for  
6 reactor licensing, GEIS for reactor  
7 relicensing, -- I've said that already. Maybe I  
8 didn't? Yes, I did. Sorry.

9 To ensure compliance with NEPA, The  
10 National Environmental Policy Act in the consideration  
11 of this new and significant information the Missouri  
12 Coalition for the Environment and other Petitioners  
13 request that the NRC take the following actions:

14 Suspend the effectiveness of Table B-1 of  
15 10 CFR, Part 51, Subpart A of Appendix B, -- A1B-1, which  
16 codifies the NRC's generic finding that spent fuel  
17 storage in high-density reactor pools during the  
18 license renewal term of operating reactors poses no  
19 significant environmental impacts and therefore need  
20 not be considered in individual reactor licensing  
21 decisions.

22 Suspend the effectiveness, in any new  
23 reactor licensing proceeding for reactors that employ  
24 high-density pool storage of spent fuel, of all  
25 regulations approving the standardized designs for

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 those new reactors and all environmental assessments  
2 approving severe accident mitigation design  
3 alternatives. I wanted to make sure we pointed that  
4 out, because Ameren Missouri has, for the last five or  
5 so years, been interested in new nuclear power in  
6 Missouri.

7 Third, republish for public comment the  
8 following documents with respect to new and significant  
9 information regarding the environmental impacts of  
10 high-density spent fuel storage in reactor pools and  
11 the costs and benefits of measures for avoiding or  
12 mitigating those impacts, including the license  
13 renewal Generic Environmental Impact Statement,  
14 NuReg-1437, Revision 1, June 2013, and the 2013 Revised  
15 License Renewal GEIS. Second, the EIS(s) from new  
16 reactors, third, the EA(s) for all new certifications  
17 for standardized reactor designs; again, because  
18 Ameren is interested in building new nuclear reactors  
19 in Missouri; duly modified NRC regulations that make  
20 or rely on the findings regarding the environmental  
21 impact for spent fuel storage during reactor operation,  
22 including Table B-1, and all regulations approving  
23 standardized reactor designs.

24 And lastly, suspend all the reactor  
25 licensing decisions and license renewal decisions

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 pending completion of the proceeding. I had a few more  
2 questions and if there is time at the end maybe we can  
3 talk some more, but thanks.

4 MR. BURTON: Okay. Thank you, Mr. Smith.  
5 Right now I have our last commenter, Ms. Pamela  
6 Todorovich. And after that, if there is anyone else  
7 who would like to make any additional comments we will  
8 allow that, okay?

9 MS. TODOROVICH: I just have a few  
10 comments. My name is Pamela Todorovich. I live at 8  
11 Fair Oaks, St. Louis, Missouri.

12 Concerns about the United State's aging  
13 infrastructure has been in the news a lot lately, about  
14 bridges and highways, and rails, and gas lines. But  
15 an equally pressing issue is the aging nuclear plants.  
16 There are many people in Callaway County and in the St.  
17 Louis area that are very concerned about this. St.  
18 Louis is only 60 air miles away. If there would be an  
19 accident radioactive iodine would shallow on the  
20 wind, -- a 30 mile an hour wind and get to St. Louis  
21 in two hours. Could we be alerted? Would we have time  
22 to take those pills to protect our thyroid?

23 Extending the license of the Ameren Nuclear Plant  
24 would be akin to, -- in my opinion, akin to driving a  
25 forty year old car. You know something is going to

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 happen. Pipes corrode. The crude that Kay mentioned  
2 builds up. Nuclear radiation leaks out. The gamma  
3 rays and Cobolt-60 are very dangerous, making  
4 especially dangerous work for people who work in the  
5 plant.

6 I was reading about another old plant.  
7 In 2007 the Vermont Yankee Nuclear Plant had a partial  
8 collapse of its cooling tower. And then again in 2010  
9 the operators of that plant discovered that nearby  
10 groundwater had been contaminated by radioactive  
11 tritium, which apparently had leaked out from  
12 underground pipes. And yet, despite these  
13 transgressions the NRC extended Vermont Yankee's  
14 license for operation the very next year.

15 We continue to see many examples of these  
16 old plants releasing deadly nuclear isotopes into the  
17 environment and ultimately into our bodies. I was  
18 going to also mention, -- it occurred to me when I read  
19 that the spent fuel pools only have about six years left  
20 as far as the capacity. I would like to know what the  
21 plan is then?

22 So as a mother, and a grandmother, and a  
23 concerned citizen, I am urging the NRC to reject the  
24 extension of this license and operation for the safety  
25 and health of all Missourians.

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 MR. BURTON: Thank you, Ms. Todorovich.  
2 That was the last formal comment. Is there anyone else  
3 who would like to make a comment?

4 (No audible response)

5 MR. BURTON: No? Okay, then with that we  
6 are getting to the end of the meeting. Before we have  
7 our closing remarks I wanted to encourage everyone  
8 again to fill out the feedback form. If you don't  
9 already have one there are copies at the administration  
10 table. Getting your feedback on meeting is extremely  
11 important to us and we really want to encourage you to  
12 fill those out.

13 Also, I wanted to thank Ms. Deborah Carter  
14 who is serving as our transcriber today. We really  
15 appreciate that. And I think the next thing we will  
16 doing is start closing remarks, and I'll turn it over  
17 to Brian Wittick.

18 MR. WITTICK: Well thank you Butch, for  
19 facilitating this session. And I would like to thank  
20 everyone for coming out today. We understand that your  
21 time is very valuable and we really appreciate all of  
22 the insights, comments and questions that everyone has  
23 provided today. It provides a lot of value to us in  
24 our process. I can assure you from the person who sees  
25 all the changes that occur as a result of these meetings

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701

1 that we do in fact take your comments seriously and  
2 factor them into the Environmental Impact Statements.  
3 The public meetings are an important part of the NRC  
4 process for openness and involvement of the public.

5           Lastly, just a couple of points, as Carmen  
6 mentioned the comment period closes, so if you did not  
7 get your comments in today or if you have any additional  
8 comments that you want to make it closes on April 7th.  
9 There are a couple of means that you have for submitting  
10 comments. And as for today, at the close of the session  
11 the NRC staff will be around if you would like to engage  
12 in further discussions. We will be happy to facilitate  
13 that. And will anyone from Ameren be around to, --  
14 (Positive gesture)

15           MR. WITTICK: -- Ameren will be around as  
16 well, if anyone would like to discuss some of your  
17 questions and comments with them. With that, this  
18 closes the session. Thank you.

19           (Whereupon, the public meeting was  
20 concluded at 3:25 p.m.)

21

22

23

24

25

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVE., N.W.  
WASHINGTON, D.C. 20005-3701