

NRC PUBLIC MEETING TO DISCUSS THE
DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
FOR BROWNS FERRY LICENSE RENEWAL

JANUARY 25, 2005

EVENING SESSION

ATHENS STATE UNIVERSITY

300 NORTH BEATY STREET

ATHENS, ALABAMA 36301

Enclosure 4

NEAL R. GROSS & CO., INC.
(202) 234-4433

AGENDA FOR THE PUBLIC MEETING TO RECEIVE COMMENTS
ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR
BROWNS FERRY NUCLEAR PLANT LICENSE RENEWAL

Tuesday, January 25, 2005

EVENING SESSION

Meeting Session 7:00 p.m. to 10:00 p.m.

I.	Welcome and Purpose of Meeting -	3
	15 minutes (Chip Cameron)	
II.	Overview of License Renewal Process -	6
	5 minutes (Andy Kugler)	
III.	Overview of Environmental Review Process -	13
	5 minutes (Michael Masnik)	
IV.	Results of the Environmental Review -	20
	30 minutes (Michael Sackschewsky and Robert Palla)	
V.	How Comments can be Submitted -	32
	5 minutes (Michael Masnik)	
VI.	Public Comment - (as required) (Chip Cameron)	63
VII.	Closing etc. - (Chip Cameron)	78

1 EVENING SESSION

2 (7:00 p.m. to 10:00 p.m.)

3 MR. CAMERON: Good afternoon, everyone. My name
4 is Chip Cameron, and I'm the Special Counsel for Public
5 Liaison at the Nuclear Regulatory Commission, which we're
6 going to refer to tonight as the NRC, and I want to
7 welcome all of you to the NRC's public meeting.

8 Our subject tonight is the Draft Environmental
9 Impact Statement that the NRC has prepared as one part of
10 its evaluation of an application that we received from TVA
11 to renew the operating licenses for Browns Ferry Units 1,
12 2, and 3.

13 And it's my pleasure to serve as your
14 Facilitator for tonight.

15 Basically, our meeting format is going to be in
16 two parts. The first part is going to give you some brief
17 background information on license renewal through some
18 brief NRC presentations, and we'll answer any questions
19 that you have about either the license renewal process or
20 the information and conclusions that are in the Draft
21 Environmental Impact Statement.

22 The second part of the meeting is to hear from
23 anybody who wants to make a formal comment to us on any
24 concerns, recommendations, advice that they might have
25 about either the license renewal process or the Draft

1 Environmental Impact Statement.

2 We are taking written comments on the Draft
3 Environmental Impact Statement, and the NRC staff will be
4 telling you, in a few moments, how to submit those written
5 comments and by when.

6 But we wanted to be here to talk to you
7 personally tonight, and I just would emphasize that
8 anything you say tonight will carry as much weight as any
9 written comment that we receive.

10 And we are taking a transcript. We have Mr.
11 Steve Anderson here, who is our court reporter. That will
12 be our record of this evening meeting, and it will be
13 available to any of you who would like to have a copy of
14 the transcript.

15 I want to introduce a few people to you, our
16 speakers tonight. First of all, we're going to have Mr.
17 Andy Kugler. He is the Chief of the Environmental Review
18 Section within our License Renewal and Environmental
19 Impact Program at the NRC. And Andy and his staff is
20 responsible for doing the environmental reviews on these
21 subjects.

22 Next, we will go to Dr. Michael Masnik. Mike is
23 the Project Manager for the Environmental Review on this
24 license renewal application.

25 Then, we are going to go to the heart of

1 tonight's meeting the Draft EIS. We are going to go to
2 Dr. Mike Sackschewsky, right here, who is from the
3 Pacific Northwest National Lab. He is a team leader of
4 the experts that NRC hired to do the environment review
5 for us. He will be talking about that.

6 And a specialized part of the Environmental
7 Impact Statement is the severe accident mitigation
8 alternatives also known as SAMAs, and we have Mr. Bob
9 Palla, Senior Reactor Engineer from the NRC to tell us
10 about that.

11 Then, we will go out to all of you for
12 questions. Then, we will go to the public comment period,
13 and we look forward to that. I'm going to suggest a
14 guideline of five minutes for your comments tonight, and
15 we usually find that that's enough time to make the major
16 points, and gives us enough information, and others in the
17 audience, enough information to realize what the issues of
18 concern are.

19 We thank you all for being here tonight and
20 helping us with this project.

21 I do want to introduce Dr. P. T. Kuo, who is
22 right here from the NRC. Dr. Kuo is the Program Director
23 of the License Renewal and Environment Impact Program, so
24 everybody works for Dr. Kuo, I guess, those of us who are
25 from the NRC, at any rate.

1 With that, I think I'm going to go to Andy.
2 Andy?

3 MR. KUGLER: Thank you, Chip, and thank you all
4 for coming out this evening for our meeting on the
5 Environmental Impact Statement for license renewal for
6 Browns Ferry Units 1, 2, and 3.

7 I hope the information we provide you tonight is
8 helpful to you in understanding the process we're going
9 through, understanding where we are at this point, and the
10 role that you can play in helping to ensure that the final
11 Environmental Impact Statement is an accurate document.

12 First, I would like to provide some general
13 context for license renewal. The Atomic Energy Act
14 authorizes the NRC to license nuclear reactors for a
15 period of 40 years.

16 For Browns Ferry Units 1, 2, and 3 those
17 original licenses expire in years 2013, 2014, and 2016,
18 respectively.

19 Our regulations also make provisions for us to
20 extend those operating licenses for an additional 20
21 years, and TVA, has applied for license renewal for all
22 three units.

23 As part of the NRC's review of the license
24 renewal application, we perform an environmental review.
25 We look at the impacts to the environment of operating

1 these plants for an additional 20 years of operation.

2 We held a meeting here back in April where we
3 were asking for input from you on the scope of what our
4 review should be: what issues we should consider in our
5 evaluation. As we indicated then, we've now completed the
6 draft and we come back to you at this point to let you
7 comment on the draft or ask any questions you may have on
8 our Draft Environmental Impact Statement.

9 At the conclusion of our presentation, we will
10 be happy to receive those comments. And, then, afterwards
11 the staff will remain behind, if you have any questions or
12 if you wish to speak to us.

13 Next slide.

14 Now, before I get into the discussion of the
15 license renewal process, I'd like to tell you a little bit
16 about the NRC, who we are and what our mission is.

17 As I said, the Atomic Energy Act is the
18 legislation that authorizes the NRC to regulate the
19 commercial use of nuclear materials in the United States,
20 including regulation of the power reactors.

21 In carrying out that authority, our mission is
22 three-fold: we are here to protect the public health and
23 safety, to protect the environment, and to provide for
24 common defense and security.

25 The NRC accomplishes its mission through a

1 number of programs, including assessments of licensee's
2 performance, inspections performed at the sites,
3 enforcement actions, and review of operating experience
4 from all the plants throughout the country.

5 Turning now to license renewal in particular,
6 the process we go through in license renewal is similar to
7 the original licensing process that we used when these
8 plants were licensed. Basically, there are two tracks to
9 this review: there was the safety review and an
10 environmental review.

11 The environmental review is the focus of our
12 meeting tonight, but I do want to say a few words about
13 the safety review so you have some understanding of what's
14 involved.

15 The safety review includes a safety evaluation
16 report, on-site inspections and audits, and an independent
17 review of the results by the Advisory Committee on Reactor
18 Safeguards, or ACRS. And I will speak more about them in
19 a few moment.

20 Next slide.

21 This slide gives a big picture overview of the
22 license renewal process. As you can see, there are those
23 two tracks. The upper portion of the slide is the safety
24 review and the lower portion is the environmental review.

25 The safety review involves the staff's

1 evaluation of the safety information included in the
2 application from TVA. And there is a team of about 30 NRC
3 engineers and contractors who are performing that review.

4 I would like to introduce the project managers
5 who are involved in that review, and they're here tonight.
6 We have Ram Subbaratnam and Yoira Diaz. They are the
7 project managers for the safety review.

8 Now safety review and license renewal focuses on
9 how TVA will manage the aging of selected components,
10 systems, and structures. Some of the programs they will
11 use for managing aging are already in place at the plant;
12 others will be put in place for license renewal.

13 The safety review process also involves audit
14 and on-site inspections, and these inspections are
15 conducted by teams made up from personnel from our
16 headquarters and from our regional office.

17 We do have representatives of the inspection
18 program here tonight, and I'd like to introduce them. We
19 have the Branch Chief from Region II, Mr. Steven Cahill.
20 There he is. And we also have one of the Senior Resident
21 Inspectors from Browns Ferry site, Mr. Robert Monk.

22 Now I want to mention the resident inspectors in
23 particular because a lot of people are not aware that we
24 have inspectors who are on site all the time. They are
25 assigned to the site. They live here and they work here,

1 and they monitor the licensee's performance on a day-to-
2 day basis.

3 In addition, we perform inspections with teams
4 that come from the regions, some teams that come from
5 headquarters. But these are the people who are there
6 every day.

7 The results of the inspections that we perform
8 for license renewal are documented in separate inspection
9 reports.

10 The results of the safety review that are
11 performed by the team that I mentioned, as well as the
12 inspection results, are combined into a safety evaluation
13 report, which we are in the process of completing right
14 now. It is not yet complete.

15 But after the safety evaluation report is
16 completed, it will be sent to the ACRS, the Advisory
17 Committee on Reactor Safeguards, for an independent
18 review. Now the ACRS is made up of technical experts in
19 reactor safety, and they're independent of the NRC. They
20 act as a consulting body for the commission.

21 After the report is prepared, it will be
22 independently reviewed by the ACRS.

23 In the case of license renewal they will review
24 the application that came from TVA and they'll review our
25 Safety Evaluation Report. They will reach their own

1 conclusions and, then, they will write a report and submit
2 it to the Commission providing their advice to the
3 Commission on this application.

4 As I mentioned, the second part of the review
5 process, which I mentioned, is the Environmental Review,
6 which is our focus tonight. The Environmental Impact
7 Statement that we prepare is a supplement to what we call
8 the generic Environmental Impact Statement for license
9 renewal. This was a document that was prepared by the
10 Commission to look generically at what the impacts of what
11 license renewal would be at nuclear power plants around
12 the country.

13 The Environmental Impact Statement we prepared
14 for Browns Ferry in particular is a supplement to that
15 Generic Environmental Impact Statement.

16 After we receive the comments on the draft, both
17 tonight and any written comments we receive by March 2nd,
18 we'll consider those comments, make changes to the Draft
19 Environmental Impact Statement, and, then, we expect to
20 issue the Final Environmental Impact Statement in July.

21 So, as you can see from the slide, there is are
22 a number of inputs that are required for the Commission in
23 order to allow them to make their decision whether or not
24 to approval license renewal for these plants.

25 They need the Safety Evaluation Report input,

1 the Environmental Impact Statement, the input from the NRC
2 Region on the inspections, and the input from the Advisory
3 Committee on Reactor Safeguards.

4 I would like to point out the splash symbols on
5 the slide. These are locations where the public can get
6 involved with the process.

7 In the Environmental Review at the bottom there
8 you can see there are two. The first occurred at scoping
9 back in March and April of last year where we asked for
10 input from the public on what issues we should consider in
11 our Environmental Impact Statement, and that included the
12 meetings that we held here at the beginning of April of
13 last year.

14 The second is the comment period that's
15 currently underway on the draft, and these meetings are
16 part of that comment period. It is an opportunity for you
17 to give us comments directly.

18 Other than those two, there is a splash symbol
19 there for hearings. There was an opportunity for hearing
20 back when the application was first accepted; however, we
21 did not receive any requests for a hearing, so there's not
22 going to be a hearing in this case.

23 And the last of these is the ACRS meetings.
24 These meetings are open to the public but I will mention
25 they are normally held at our headquarters up in

1 Rockville.

2 That concludes my remarks on the overall
3 process. I would like to turn things over to Dr. Masnik
4 to discuss the environmental process in particular.

5 MR. MASNIK: Thank you, Andy.

6 My name is Michael Masnik, and I'm the
7 Environmental Project Manager. I'd like to personally
8 welcome each of you here today and thank you for
9 participating in our process as well.

10 My responsibility is to coordinate a team of
11 experts from both the NRC and the national laboratories in
12 the preparation of an environmental impact statement that
13 evaluates the license renewal period.

14 The National Environmental Policy Act of 1969
15 requires a systematic approach in evaluating impacts of
16 proposed major federal actions. Consideration is given to
17 the environmental impacts of the proposed action and the
18 mitigation of any impacts that are believed to be
19 significant. Alternatives are taken in to account and the
20 no-action alternative is considered.

21 The Environmental Impact Statement is a
22 disclosure tool and it involves public participation.

23 NRC requires that an Environmental Impact
24 Statement be prepared for the proposed license renewal
25 activities.

1 So we are here today to collect public comments
2 on the draft statement that we issued early last December,
3 and we will consider all the comments that we have
4 received during the preparation of the Final Environmental
5 Impact Statement.

6 Next slide.

7 This slide defines our legal decision standard
8 that follows from our environmental analysis. It
9 basically asks two questions: is the license renewal
10 acceptable from an environmental standpoint; and,
11 secondly, should the option for extending the power plant
12 operations be preserved?

13 Next slide.

14 Now in a previous slide, slide 5, Andy already
15 described the overall safety environmental process. Here
16 we have a more detailed slide that identifies the process
17 that the NRC staff goes through in evaluating an
18 application for license renewal.

19 TVA submitted their application for a license
20 renewal to the NRC on December 31, 2003. We subsequently
21 put out formal notice in the Federal Register that we
22 would prepare an environmental impact statement associated
23 with that application.

24 The Federal Register notice began a scoping
25 process which invited public participation early in the

1 process.

2 We conducted a scoping meeting this past year,
3 in April, to help define the bounds of our environmental
4 review. We also brought a team of experts from the
5 national labs to the site to talk to local officials and
6 experts, see the site first hand, to review documents and
7 documentation that was available on site, and also to
8 interview TVA site personnel.

9 As a result of the team audit, the licensee sent
10 us over 11,000 pages of supplemental information on a
11 great many subjects, including meteorology, plant
12 operating history, ecological/socioeconomic and cultural
13 studies and references to their environmental report.

14 The staff also formally requested additional
15 information on two occasions related to the severe
16 accident mitigation analysis, a subject we'll talk about
17 in a little more detail in a few minutes.

18 The staff then prepared a Draft Environmental
19 Impact Statement; we issued that draft supplement to the
20 Generic Environmental Impact Statement in December of
21 2004.

22 In a few minutes we'll be hearing from Mr. Mike
23 Sackschewsky from the Pacific Northwest National
24 Laboratory, the Lab Team Leader, who will share the
25 results of our findings.

1 Currently, we are in the middle of the public
2 comment period on the draft statement which will expire on
3 March 2nd 2005.

4 Once we get all the public comments in,
5 including those we receive at this meeting, then we will
6 evaluate all those comments and publish a Final
7 Environmental Impact Statement. Our schedule presently
8 provides for the Final Environmental Impact Statement to
9 be published in July of 2005.

10 For the moment that concludes my remarks, and
11 I'd be happy to entertain any questions on the process
12 that we're undertaking here.

13 MR. CAMERON: You just heard from Andy and Mike
14 about our process. Are there any questions at all about
15 process that we can answer before we go on to the Draft
16 Environmental Impact Statement?

17 Yes, and please introduce yourself to us.

18 MS. TIPPER: Jackie Tipper.

19 The scoping meeting, where was the scoping
20 meeting, and who were the people involved with that?

21 MR. MASNIK: It was a meeting very similar to
22 this one, in this room. It occurred on April 1st of this
23 year, and we had, I would say, what(?) about 20 members of
24 the public in the afternoon and probably about an equal
25 number in the evening. It was a noticed meeting held in

1 this room.

2 MS. TIPPER: In this one?

3 MR. MASNIK: Yes, in this room, on the first of
4 April of this past year.

5 MR. CAMERON: Mike, maybe to alleviate some of
6 Jackie's concerns, maybe you could just talk a little bit
7 about scoping versus the comment on the Draft
8 Environmental Impact Statement where I think this is
9 probably -- although scoping is important, this is a major
10 event.

11 MS. TIPPER: Let me ask another question.

12 MR. CAMERON: Go ahead.

13 MS. TIPPER: This meeting, Dennis Sherad did an
14 article in the Times Daily. I read the Decatur Daily
15 front and back, except I do not read the classified ads.
16 I saw nothing in the Decatur Daily about this meeting at
17 all.

18 MR. MASNIK: Well, my understanding --

19 MS. TIPPER: How are people supposed to, you
20 know, know about this?

21 MR. MASNIK: Well, we attempt to notify the
22 public in a number of different ways. To answer your
23 question specifically, I believe it was in the classified
24 ads of the Decatur Daily. We had ads in four newspaper:
25 Florence, Huntsville, Athens and Decatur. And my

1 understanding was last -- not this past Sunday but Sunday
2 a week ago there was an article and in that article it
3 happened to mentioned this meeting. That may have been
4 where you had seen it. I believe it was in the Decatur
5 Daily that that article was published.

6 MS. TIPPER: The information I got was from the
7 Times Daily. I didn't find any information from Decatur
8 Daily at all.

9 MR. MASNIK: Oh, I'm sorry. Okay.

10 MS. TIPPER: And I called them and asked them
11 why there had been no information, and they had no idea
12 what I was talking about.

13 MR. MASNIK: Well, we do put out a press
14 release. So there is a press release that's issued. We
15 publish the ads in the papers. Of course, we don't pick
16 all the papers, but we try to get representative papers
17 from each of the communities surrounding the plant. We
18 publish it in the Federal Register. We maintain a
19 website, the NRC website and all the meetings are noticed
20 there. We notified the local governments, and we ask them
21 to announce it at their town council meetings.

22 I mean we do everything we can, but
23 unfortunately, it is difficult to reach most members of
24 the public. Unless you are interested in following it,
25 it's probably difficult to get the word.

1 MS. TIPPER: River Neighbors. That is not --
2 you all aren't publishing that any more. TVA is not.

3 MR. CAMERON: Just to clarify one thing -- and
4 maybe you don't need to have this clarified for you -- but
5 we all from the Nuclear Regulatory Commission. I don't
6 know what TVA publishes or, if they do publish it, whether
7 there was any mention of this particular meeting in it.

8 I guess just to reiterate, we're here to try to
9 give you as much information about the draft EIS as
10 possible and, then, there is this subsequent comment
11 period that you have an opportunity to comment.

12 Even though we do put the notice out at a lot of
13 places, I think we do realize we could probably always do
14 better than we do. So, thank you for that reminder. We
15 won't forget you on the record.

16 MR. MASNIK: I think we had 15 posters that we
17 put out as well.

18 MR. CAMERON: Okay, so there were posters around
19 town. Thank you.

20 MS. TIPPER: Which town?

21 MR. CAMERON: I'm not sure. Rogersville,
22 Athens, Calhoun College. Well, we're glad you're here.

23 Other questions on process?

24 (No response.)

25 We are going to go to Dr. Sackschewsky to talk

1 about the Draft Environmental Impact Statement.

2 MR. SACKSCHEWSKY: Good evening.

3 My name is Mike Sackschewsky, and I am the
4 Project Team Leader for the Browns Ferry EIS.

5 I'm an ecologist with Pacific Northwest National
6 Laboratory, or PNNL, which is located in Richland,
7 Washington.

8 The NRC contracted with PNNL, as well as the Los
9 Alamos National Laboratory and Argonne National
10 Laboratory, to assist the staff with the expertise
11 necessary to evaluate the impacts of license renewal at
12 Browns Ferry.

13 The NRC team consists of scientists and
14 engineers representing a wide variety of areas, all
15 aspects of the environment including atmospheric science,
16 socioeconomics and environmental justice, cultural
17 resources, archeology, land use, hydrology and water
18 quality, aquatic and other disciplines as shown on the
19 slide.

20 Next slide.

21 This slide shows our overall approach in
22 preparing the supplement EIS. In the mid-1990s the NRC
23 evaluated the impacts of operating nuclear plants across
24 the country and based on this evaluation prepared a
25 Generic Environmental Impact Statement for license renewal

1 or the GEIS.

2 The GEIS identified and evaluated 92 different
3 environmental issues for license renewal. For 69 of those
4 issues the NRC was able to determine that the impacts are
5 common to all sites, were common to all reactor sites with
6 certain features such as plants that have cooling towers;
7 and a generic conclusion can be made for these issues.
8 These are called the Category 1 issues.

9 For the other 23 issues the NRC found that the
10 impacts were not the same at all sites and therefore, a
11 site specific analysis was needed. We call these the
12 Category 2 issues.

13 Only certain issues addressed in the GEIS are
14 applicable to any particular site such as Browns Ferry
15 because of the design and location of the plant.

16 For those generic issues that are applicable to
17 Browns Ferry, we determined if there is any new
18 information regarding that issue that might change the
19 conclusion that was done in GEIS. If there is no new
20 information, then the conclusions of the GEIS is adopted.
21 If new information is identified and determined to be
22 significant, then a site specific analysis would be
23 performed.

24 For the Category 2 issues related to Browns
25 Ferry a site specific analysis was performed.

1 Finally, during the scoping period the public
2 was invited to provide information on potential new
3 issues, and the team, during its review, also looked to
4 see if there were new issues that needed to be evaluated.

5 Next slide.

6 For each environmental issue that was identified
7 an impact level is assigned and these impact levels follow
8 the definitions that are shown on the slide. And as an
9 example of impact levels, for instance, if the operation
10 of Browns Ferry plant were to cause a loss of adult or
11 juvenile fish at the intake structure, and if that loss of
12 fish is small so that it could not be detected in relation
13 to the total population, then the impact would be small.

14 If the loss has caused the population to decline
15 and then stabilize at some other level, then the impact
16 might be moderate.

17 However, if the losses at the intake cause the
18 fish population to decline to the point where it cannot be
19 stabilized and continue to declines then the impact would
20 be large.

21 Next slide.

22 When the team evaluated the impacts from
23 continued operations at Browns Ferry, we considered
24 information from a wide variety of sources. We considered
25 what the licensee had to say in their Environmental

1 Report, which is part of the license renewal application.
2 We conducted a site audit during which we toured the site,
3 interviewed plant personnel, reviewed documentation of
4 plant operations. We also talked to Federal, State and
5 local officials, regulatory agencies and local service
6 agencies.

7 Finally, we considered all the comments that we
8 received from the public during the scoping period. These
9 comments are listed in Appendix A of the draft Supplement
10 EIS along with the NRC responses.

11 This was the body of information that was the
12 basis for the analysis and preliminary conclusions in the
13 Browns Ferry supplement.

14 The central analysis in the Browns Ferry
15 Supplement are presented in chapters 2, 4, 5, and 8. In
16 Chapter 2 we describe the plant, its operation, and the
17 environment around the plant.

18 In Chapter 4 we examine the environmental
19 impacts of routine operations during the 20 year license
20 renewal term. The team took those 92 issues, we
21 categorized all the issues, and those that were applicable
22 were put into these categories that are shown on the
23 slide. And I'll discuss each one of those categories in
24 more detail.

25 Chapter 5 contains the assessment of accidents,

1 which Mr. Palla will discuss in the next presentation.

2 Chapter 8 describes several alternatives to the
3 proposed license renewal and their environmental impacts.

4 Each of these areas are discussed in detail in
5 the Browns Ferry supplement, and I will give you the
6 highlights.

7 Next one.

8 The first set of issues I'm going to talk about
9 relate to the cooling system for Browns Ferry. There are
10 about 24 Category 1 issues, such as scouring,
11 eutrophication or discharge of chlorine.

12 We found that all these Category 1 issues meet
13 all of the conditions of the Generic Impact Statement and
14 there was no new information presented during the scoping,
15 the site audit or any phase of the assessment.

16 Therefore, the NRC staff concludes that there
17 are no impacts beyond those identified in the GIS.

18 The issues the team looked at on a site specific
19 basis include entrainment, impingement of fish and
20 shellfish, heat shock, water use conflicts and micro-
21 biological organisms.

22 Now entrainment refers to the pulling of small
23 aquatic organisms through the plant's cooling system; and
24 impingement occurs when a larger organism is pulled
25 towards the cooling system but is pinned on the screen

1 that provides, of course, the filtering of the cooling
2 water. In all of the cooling system impacts, we
3 found that the potential impacts in these area were small
4 and that no additional mitigation was warranted.

5 We looked at seven, Category 1 issues associated
6 with the transmission line such as bird collisions,
7 transmission line right-of-way management and air
8 quality. The Category 1 issues met the conditions for the
9 Generic Impact Statement and there was no new information
10 presented during any of the scoping process.

11 Therefore, the NRC staff concludes that there
12 are no transmission line impacts beyond those identified
13 in the GEIS.

14 One transmission line issue did required a site
15 specific analysis and this was electric shock. We found
16 that the potential impacts in this area were small and
17 additional further mitigation was not warranted.

18 Radiological impacts are a Category 1 issue, and
19 NRC has made a generic determination that the impact of
20 radioactive material released during the nuclear plant
21 operations during the 20 year license renewal period is
22 small. But because these releases are a concern, I will
23 discuss them in a more detail.

24 Nuclear plants are designed to release small
25 amounts of radiological effluents to the environment.

1 Browns Ferry is no different than other plants, and it
2 does release some of these effluents.

3 During our site visit, we looked at the effluent
4 release and monitoring program documentation. We looked
5 at how the gaseous and liquid effluents are treated and
6 released, as well as how the solid wastes are treated,
7 packaged and shipped.

8 We looked at how the applicant determines and
9 demonstrates that they are in compliance with the
10 regulations for release of radioactive effluents.

11 We also looked at data from on-site and near-
12 site locations that the applicant monitors for airborne
13 releases and direct radiation and other monitoring
14 stations beyond the site boundary, including locations
15 where milk, water, fish and food products are sampled.

16 We found that the maximum calculated doses for a
17 member of the public or site worker are well within the
18 regulatory limits.

19 Now there is a near unanimous consensus within
20 the scientific community that these limits are protective
21 of human health. And because these releases from the
22 plant are not expected to increase during the 20 year
23 license renewal term, and because we found no new and
24 significant information related to this issue, we adopted
25 the generic conclusion that the radiological impact on

1 human health and the environment is small.

2 There were several Category 1 socioeconomic
3 issues that we examined, including public safety,
4 education and aesthetic impacts. These Category 1 issues
5 meet all the conditions for the Generic Impact Statement
6 and there is no new information presented during the
7 scoping process, the site audit or any other phase of the
8 assessment.

9 Therefore, in regard to the Category 1 issues,
10 the NRC staff concluded there are no impacts beyond those
11 already identified in the GEIS.

12 The issues the team looked at on a site-specific
13 basis included housing, transportation, public utilities,
14 historic and archeological resources, and environmental
15 justice. In each of these cases we found that the
16 potential impacts in all of these areas were small and
17 that no mitigation was needed.

18 The GEIS identified one Category 1 issue and
19 this is the ground water use conflicts for plants that use
20 less than 100 gallons per minute of ground water.

21 Browns Ferry currently uses no groundwater and
22 therefore, the generic conclusion of a small impact is
23 appropriate for this plant.

24 There is also one Category 2 issue related to
25 groundwater. That is groundwater use conflicts for plants

1 using cooling towers and withdrawing water from a small
2 river.

3 Although the Tennessee River seems to be pretty
4 big, the average annual flow is only about half of the
5 flow rate that the NRC uses to define a small river. We
6 examined this issue and determined that the potential
7 impacts of operating the cooling towers on ground water
8 supplies is small and that additional mitigation is not
9 warranted.

10 There are approximately 49 species that could
11 occur in the range of Browns Ferry site or the
12 transmission lines that are currently listed as
13 threatened, endangered or candidate species under the
14 Endangered Species Act. And this slide shows a few of
15 these, showing the range of types of organisms that are
16 included on that list of 49.

17 There are also a very large number of species
18 that are listed by the Alabama and Mississippi State
19 Heritage Programs.

20 We prepared a detailed biological assessment to
21 analyze the effects of continuing operation and re-
22 licensing of Browns Ferry, and we have provided that
23 biological assessment to the US Fish and Wildlife Service,
24 and included it in Appendix E of the Browns Ferry
25 Supplement.

1 Based on this biological assessment, additional
2 independent analysis and discussions with US Fish and
3 Wildlife Service Staff, the staff's preliminarily
4 determination is that the impact of operating Browns Ferry
5 during the license renewal term on threatened or
6 endangered species would be small.

7 The last issue I would like to talk about is
8 "cumulative impacts." These are impacts that are minor
9 when considered individually but significant when
10 considered with other past, present, or reasonably
11 foreseeable future actions, regardless of what agency or
12 person undertakes those actions.

13 The staff considered cumulative impacts in all
14 of the issue categories that I have already discussed, and
15 re-evaluated these to the end of the 20 year license
16 renewal term. Our preliminary determination is that any
17 cumulative impacts resulting from the operation of the
18 Browns Ferry Nuclear Plant during the license renewal term
19 would be small.

20 The team also looked at these other
21 environmental impacts. In the GEIS all issues for the
22 uranium fuel cycle and solid waste management as well as
23 decommissioning are considered to be Category 1 issues.

24 For these issues no new and significant
25 information was found during our review of the site.

1 Therefore, the generic conclusions were adopted.

2 The team also evaluated the potential
3 environmental impacts associated with not renewing the
4 Browns Ferry operating license and replacing this
5 generation capacity with alternative power sources.

6 The team looked at a no action alternative, new
7 generation from coal fire, gas fire, new nuclear or
8 purchase power alternative technology such as wind, solar
9 and hydro power, and, then, a combination of these
10 alternatives.

11 For each of these alternatives, we looked at the
12 same types of issues, for example, water use, land use and
13 ecology that we looked at for the operation of Browns
14 Ferry during the license renewal term.

15 We found that all reasonable alternatives would
16 entail some environmental impacts, either operational,
17 such as the release of effluents, or construction impacts
18 or both.

19 After evaluating the reasonable alternatives,
20 the team's preliminary conclusion is that the
21 environmental effects, in at least some impact categories,
22 can reach moderate or large significance.

23 Now to reiterate, in 1996 the NRC reached
24 generic conclusions for 69 issues related to operating
25 nuclear plants for another 20 years.

1 For these Category 1 issues we looked to see if
2 there was any information that was both new and
3 significant, and whether or not we could adopt the generic
4 conclusions.

5 For the remaining Category 2 issues and for
6 validated new issues, the team performed an analysis
7 specific to the Browns Ferry site.

8 Next slide, please. Thank you.

9 For all the Category 1 issues presented in the
10 generic EIS that relate to Browns Ferry, we found no
11 information that was both new and significant; therefore,
12 we have preliminarily adopted the conclusion that the
13 impact for these issues is small.

14 The team analyzed the Category 2 issues in this
15 supplement and found the environmental effects resulting
16 from each of these issues were also small.

17 During our review the team found no new issues
18 that were not already known.

19 Last, we found that the environmental effects of
20 alternatives, at least in some impact categories, can
21 reach moderate to large significance.

22 That concludes my remarks regarding findings.

23 MR. CAMERON: Thank you very much.

24 You just heard about the types of information
25 the NRC evaluated, what conclusions were drawn, and

1 alternatives. Is there any questions on this? Anything
2 that Mike can explain in a little bit more detail.

3 Yes. Nancy, could you just introduce yourself
4 to us, please.

5 MS. MUSE: I'm Nancy Muse from Florence,
6 Alabama. It is my understanding as an Army brat -- my dad
7 was a career Army -- the Army and the military consider,
8 when they go in to any type of operation, the worse case
9 scenario. I am wondering if the NRC, in your impact
10 assessments, thought about or considered -- I mean, what
11 you're saying to me sounds great unless it is the worse
12 case scenario.

13 In the event of the worse case scenario is the
14 impact of the nuclear reactor technology comparable to
15 that of alternative energy technology?

16 MR. CAMERON: Two issues. One, I think worse
17 case analysis generally but then there's specifically an
18 issue that Nancy brought up about comparing continued
19 operation of the plant versus alternative technology.

20 MS. MUSE: Well, I mean, if you talk about the
21 impact alternative energy like a windmill would have on
22 birds that hit it, you know, fly into it -- maybe
23 migratory birds -- the worse case scenario with a nuclear
24 plant, can you compare that on a scale, the same type of
25 scale that you would to the worse scenario using

1 alternative energy sources whether it be solar, the wind,
2 or whatever it may be.

3 MR. MASNIK: This is Mike Masnik.

4 The NEPA is the legislation that requires us to
5 do an environmental impact statement. Under NEPA the case
6 law and the regulation basically has concluded that we
7 don't do a worse case scenario. In other words, we're not
8 required to look at what would be the environmental impact
9 should the worse possible accident occur at the plant.

10 Now the plant does -- you know, we evaluate the
11 impact of the plant during normal operation and off normal
12 operation, but not the kinds of accidents I think you are
13 thinking of where we would have, for example, a core melt
14 down and a massive release of radiation. So we do not do
15 that. Compare that to the worse case scenario of the
16 alternatives.

17 MR. CAMERON: But at least for comparing the
18 alternatives we look at the environment impacts,
19 obviously, from license renewal, and we look at the
20 environmental impacts from the alternatives also.

21 MR. MASNIK: Essentially, if you have a copy of
22 the document that's Chapter 8 where we look at different
23 alternatives and we look at the impact of those
24 alternatives on the environment.

25 MR. CAMERON: Before we go back to Nancy, yes,

1 sir.

2 MR. DORSEY: My name is Grant Dorsey. I'm from
3 Town Creek.

4 This document that you're referring to, how is
5 that disseminated? How did that get into the public
6 hands? Was that just from the meetings or was it made
7 available at a point where you could go pick it up and
8 review it prior to the meeting? How was that handled?

9 MR. CAMERON: Michael.

10 MR. MASNIK: We do a normal distribution of
11 this. Obviously, you are not on the list for normal
12 distribution. But what we did was, during the scoping
13 meeting we had asked for people to sign up. We would have
14 given you a copy when it was available.

15 Additionally, our web site explains how you
16 could a copy of it as well. So we do make it available.
17 Unfortunately, you didn't get one before the meeting,
18 although we do have a comment period that stretches to
19 March 2nd. So, if after tonight you look at the document
20 and you have some comments, you have a fair amount of time
21 to get back to us with them.

22 We also put it in the Athens Limestone Library
23 here in town, so it was available there also.

24 MR. DORSEY: Couple of other questions. You are
25 talking about the effluents, the normal release of

1 radiation that occurs with the operation of a nuclear
2 plant. Then, the gentleman spoke about solids. Can you
3 explain to me what solids mean?

4 And you talked about that they are packaged and
5 shipped or disposed of. Can you explain that to me? And
6 explain environmental justice.

7 MR. SACKSCHEWSKY: Solid wastes can be a variety
8 of things but, typically, they would be things like rags,
9 tools, anything that's solid that is somewhat contaminated
10 that would need to be disposed of. There are procedures
11 that they would follow for that. It normally would be
12 barreled up some way and shipped off to some licensed
13 landfill that accepts that kind of waste.

14 Environmental justice came out of an executive
15 order, oh, back in the mid-1990s. Basically, it refers to
16 a requirement for all federal agencies in the NEPA process
17 to evaluate whether a particular project is inordinantly
18 affecting a minority or low income population.

19 MR. CAMERON: Do you need more information on
20 that or is that enough for now?

21 MR. DORSEY: Is the low grade radioactivity of
22 the solids -- I'm assuming that's very low grade. Its
23 like cleanup rags and tools --

24 MR. CAMERON: Yes.

25 MR. DORSEY: -- and it's shipped to where?

1 Where are these facilities that --

2 MR. SACKSCHEWSKY: Solid wastes, we're very
3 concerned about it. A nuclear plant cannot dispose of
4 solid waste unless -- contaminated solid waste unless it
5 is to a licensed burial facility. And these are
6 facilities -- Barnwell is one. There's one out on the
7 west coast. These are facilities that are designed to
8 accept low level waste and dispose of it in shallow
9 surface landfill situations, which are monitored.

10 MR. CAMERON: Okay. Let me go over to Nancy
11 and, then, I'll be right back, Jack.

12 MS. MUSE: The speaker referred to the
13 scientific community having a broad consensus set the
14 amount of radiation released into the environment. Browns
15 Ferry was -- well, I don't know if you said negligible,
16 but it was -- in essence, what I was reading between the
17 lines, nothing to worry about? I want to know what
18 scientific community and who funded the study, and who are
19 the scientists who came to this conclusion.

20 MR. CAMERON: I think there wasn't exactly --
21 the statement about the unanimity wasn't referring
22 specifically to Browns Ferry. And Mike, you might want to
23 clarify what you were trying to say there. But, more
24 importantly, can you tell Jackie and the rest of the
25 people what science the NRC -- how does the NRC set its

1 regulations on radiation. I think that gets to who the
2 scientific community is.

3 MR. KUGLER: I'm not sure I got a full answer
4 because it is not my field.

5 This is Andy Kugler again.

6 I know one of the organizations whose
7 information we rely on is the International Committee on
8 Radiation Protection (ICRP). I know there are others. If
9 I had somebody here who has that background, they probably
10 could rattle off the names pretty easily. But they've
11 done independent studies and they've reached conclusions
12 as to what levels of exposure are safe.

13 What we're saying is that we've set our limits
14 within those limits and that these plants operate well
15 below those.

16 We actually have information in the
17 Environmental Impact Statement on the actual, I'm sorry,
18 not the actual but the maximum exposure that anybody could
19 have possibly received from these releases.

20 What we do is, we do a very conservative
21 calculation. If the person stood by the fence all year
22 and ate things that came from the river right next to the
23 plant, you know, things of that sort, basically, what is
24 the most that a person could possibly get based on these
25 releases. Those numbers are very small. They are much

1 less than our limits. And they are in the Environmental
2 Impact Statement. Are they in Section 2.2.7? I'm not
3 certain of the section. It's in chapter two, I believe,
4 where we give that information.

5 I think Barry may have a pamphlet or two from
6 the brochures that we brought that may give a little more
7 information.

8 MR. CAMERON: We also have a recent pamphlet
9 that's written in the context of the project that I think
10 goes into, perhaps, a little detail about how the
11 standards are set by the ICRP, and there's also a NCRP
12 (National Committee on Radiological Protection).

13 MR. MASNIK: I also have some detailed numbers
14 from the plant, and if you want to speak with me after the
15 meeting, I can share those with you on what the releases
16 were for last year and how that compares to the standards.

17 MR. CAMERON: Okay. Let's go to Jackie.

18 MS. TIPPER: I called three different times
19 concerning this meeting to NRC, and I asked -- well, two
20 times I only talked to an answering machine. At one of
21 those times I gave a telephone, two telephone numbers and
22 asked if there was any information on the internet where
23 we could look and find this draft. My call was never
24 returned.

25 This last time that I called they didn't seem to

1 know anything about this meeting at all. I talked to two
2 different people there at that point in time.

3 My question is, this study, the time frame, how
4 long does this time frame hold for? Is this for how many
5 years?

6 MR. MASNIK: This evaluates continued operation
7 of the plant for an additional 20 years at the time the
8 current license expires.

9 MS. TIPPER: So it doesn't cover anything past
10 the additional time that it is licensed for.

11 MR. MASNIK: The three units are currently
12 licensed for a period of time up to 2013, 2014, and 2016.
13 What this evaluates is those dates forward for 20
14 additional years.

15 MS. TIPPER: So after the plant is no longer in
16 use nothing else is covered.

17 MR. MASNIK: Well, there are a number of
18 scenarios but probably one reasonable one would be if the
19 plant receives a license renewal -- and let's pick Unit 2
20 -- at 2014 it would not shut down. Right now under the
21 current license it would have to shut down. It would
22 operate for another 20 years. So that would be 2034. At
23 that time the plant would cease operation and would now
24 enter decommissioning. And there's some requirements for
25 a licensee. For example, five years before the expiration

1 date of the license they have to send in a preliminary
2 decommissioning cost estimate.

3 Then, what would happen is, after the plant
4 permanently ceased operation in 2034, they would enter
5 decommissioning. We'd have another series of public
6 meetings where the licensee and NRC would discuss the
7 decommissioning process. Typically, decommissioning takes
8 probably between eight and ten years additional.

9 MS. TIPPER: Has that ever happened?

10 MR. MASNIK: Oh, yes. We've had a number of
11 facilities -- I apologize for the microphone but we can't
12 seem to fix it.

13 We have a number of facilities that are
14 undergoing decommissioning now. We have the Shoreham
15 Plant, Pathfinder, Fort St. Vrain are three plants that
16 have completely completed the decommissioning process and
17 the license is terminated, and the facility could be used
18 for unrestricted use, which means that you could use it
19 for an industrial facility or, for that matter, for a
20 school.

21 They would remove the radioactivity to a level
22 where it could be used for unrestricted use, what we call
23 unrestricted use.

24 MS. TIPPER: You move the radioactive material
25 away from there?

1 MR. MASNIK: You understand that during the
2 normal operation of the plant you have two things
3 happening: you have contamination, which is radioactive
4 material in places where you don't want it; and, then, you
5 have another process called "activation" where material
6 becomes radioactive if its near the core.

7 Both of those things result in solid objects
8 becoming radioactive. And if you remove that or clean the
9 surface -- I mean, you can actually clean the
10 radioactivity off the surface of an object to the point
11 where you can no longer detect it, and it's considered
12 clean at that point.

13 You would have contaminated liquids. Those can
14 be cleaned up using ion-exchange resins. There's a
15 variety of processes for treating liquid waste. And you
16 end up with water that's no longer contaminated or has
17 very low levels of contamination that you could dispose of
18 at that point.

19 There is a whole field and a whole industry
20 designed to clean these facilities up -- (static)

21 MS. TIPPER: Is this figured into the cost of
22 operating the facilities?

23 MR. MASNIK: Actually, licensees are required by
24 our regulations to have a decommissioning trust fund,
25 which requires them to put a certain amount of money aside

1 each year. The amount of money that is required at the
2 time they permanently cease operation is required by our
3 regulations. It is on the order of three or four hundred
4 million dollars that would have to be put in a trust.

5 So that money, even if, for example, the utility
6 goes bankrupt or has severe financial difficulties,
7 there's sufficient funds available to clean up the
8 facility.

9 MS. TIPPER: Well, it's my understanding that
10 TVA's Trust Fund has been deemed insufficient.

11 MR. MASNIK: Well, I don't know how much there
12 is in the trust fund now, but is there someone here from
13 the licensee who maybe could speak to that issue?

14 MS. TIPPER: And rates are going up and people
15 are losing their jobs.

16 MR. CAMERON: There is a decommissioning trust
17 fund for -- it's by reactor or reactor site.

18 MR. MASNIK: By reactor.

19 MR. CAMERON: By reactor. If anybody has the
20 information in terms of what is in the trust fund for
21 Browns Ferry, we could provide that. But if we don't have
22 that right here, we'll --

23 MR. MASNIK: I do know that every two years, by
24 regulation, they are required to submit a report to the
25 NRC which is reviewed by us.

1 MR. CAMERON: I think we have some information
2 here.

3 MR. BEASLEY: My name is Craig Beasley; I'm with
4 TVA.

5 We do have the decommissioning trust fund. The
6 investment is growing now. It's moving up to the levels
7 where it should be. I don't have those numbers, but I can
8 get them for you tomorrow.

9 MR. CAMERON: Thank you, Craig. Thank you very
10 much.

11 Jackie, after the meeting, perhaps you can give
12 us the number that you called at the NRC because maybe
13 we're not getting them the right information to be able to
14 tell people. So that would be very helpful to us.

15 Larry? Anybody have another question before we
16 go on?

17 Nancy.

18 MS. MUSE: The only problem I see with this book
19 is there are footnotes and no references, specific
20 scientists or companies that fund the studies that were
21 used to create this book. I didn't see any kind of
22 references here either.

23 MR. CAMERON: A lot of this is non-profit
24 organizations, government organizations who do this type
25 of work and look at studies that have been done on, you

1 know, Hiroshima or places like that.

2 Can we get -- not right now, but can we get
3 Nancy a fuller set of background on this that will give
4 her an idea?

5 MR. MASNIK: I think if she gives Etoy her name
6 and address we will get you some more information. I
7 mean, those pamphlets were designed for people just to
8 have sort of a general understanding of what it is. If
9 you desire more information, we certainly can get it to
10 you.

11 MR. CAMERON: Okay.

12 MS. MUSE: I have a comment about the ground
13 water. If NEPA does not require the worse case scenario
14 to be examined or outlined, it seems like it would be a
15 very nice courtesy of NRC and TVA to provide us with
16 information as to what would happen. Say, like, back in
17 1975 when a candle started a fire. What would have
18 happened or what could have happened if we did have a melt
19 down to the ground water. It would be a courtesy. It is
20 not legally required but --

21 MR. CAMERON: We'll take that as a comment.

22 MR. ZALCMAN: My name is Barry Zalcmán. Let me
23 quickly address some of the issues that you are raising,
24 the worst case analysis.

25 It is probably a wonderful segue 'cause the next

1 person that is going to make a presentation is going to
2 talk about both design basis and severe accidents and some
3 of those impacts you may be interested in. If you still
4 have questions after Mr. Palla makes his presentation,
5 then perhaps we can have a full discussion on it.

6 MR. CAMERON: Let's go to Bob Palla now. If
7 there are other questions, we'll come back. Okay. Let's
8 have Bob, as I mentioned, Senior Reactor Engineer, expert
9 on severe accident analysis, probabilistic risk
10 assessment, and he's going to talk about what we know as
11 SAMAs.

12 MR. PALLA: And I'll mention design basis
13 accidents and severe accidents, and leading up to that.

14 My name is Bob Palla and I'm with the
15 Probabilistic Safety Assessment Branch at NRC, and I'm
16 going to be discussing the environmental impacts of
17 postulated accidents.

18 These impacts are described in Section 5 of the
19 Generic Environmental Impact Statement, or the GEIS, you
20 have heard it referred to. This is a study that was done
21 to cover all plants, done in the 1996 time frame, and many
22 of the conclusions there applied generically were -- the
23 conclusions don't apply generically they are addressed on
24 the plant specific level. That's as background.

25 The GEIS evaluates two classes of accidents:

1 design basis accidents and severe accidents.

2 Design basis accidents are those accidents that
3 both the licensee and NRC staff evaluate to ensure that
4 the plant can safely respond to a broad spectrum of events
5 without risk to the public. So in these events there's no
6 core damage; there's no large releases to the environment.

7 The ability of the plant to withstand these
8 accidents has to be demonstrated before the plant is
9 granted a license. And the licensee has to demonstrate
10 acceptable plant performance for the design basis
11 accidents throughout the life of the plant. And because
12 they continue to demonstrate that they can deal with these
13 events throughout the life of the plant, the Commission
14 has determined that the environmental impact of design
15 basis accidents are of small significance.

16 Neither the licensee nor the NRC is aware of any
17 new and significant information on the capability of the
18 Browns Ferry plant to withstand design basis accidents.
19 Therefore, the staff concludes there are no impacts
20 related to design basis accidents beyond those discussed
21 in the Generic Environmental Impact Statement.

22 Now the second class of accidents discussed in
23 the GEIS are severe accidents. Severe accidents are by
24 definition more severe than design basis accidents because
25 they could result in substantial damage to the reactor

1 core.

2 And I think this is the class of accidents that
3 Nancy is referring to. The worst case accidents are going
4 to be a subset of the severe accidents. Some are more
5 severe than others. Some could result in containment
6 failure and others might not. A TMI type accident, for
7 example; core melt accident but intact containment.
8 Basically, minimal releases from that accident.

9 The Commission found in the GEIS that the risk
10 of a severe accident is small for all plants. And by this
11 I mean this is -- I'm not saying the consequences of an
12 individual accident would be insignificant. They would be
13 very significant, but risk is the probability of an event
14 times the consequences. This is summed over all of the
15 different, you know, hypothetical scenarios. So the
16 probabilistically weighted consequences of severe
17 accidents was determined a to be small for all plants.
18 Therefore, it was judged a Category 1 issue and need not
19 be addressed for license renewal on a plant-specific
20 level.

21 Nevertheless, the Commission determined that
22 alternatives to mitigate severe accidents must be
23 considered for all plants that have not done so. And that
24 is the case for Browns Ferry, that they had not been
25 previously evaluated.

1 So the evaluation of Severe Accident Mitigation
2 Alternates, which are also referred to as SAMAs, is a site
3 specific assessment. It's a Category 2 issue, as we
4 described earlier, which means it gets reviewed on a
5 plant-specific level. And that's what I intend to address
6 here for the remainder of my presentation.

7 Our review is described in Section 5.2 of the
8 Generic Environmental Impact Statement Supplement for
9 Browns Ferry. The document you may have a copy of now.
10 So Section 5.2 is a summary description, a more detail --
11 the full evaluation is in Appendix G of the Supplement.

12 The purpose of performing the SAMA evaluation is
13 to ensure that plant changes with the potential for
14 improving severe accident safety performance are
15 identified and evaluated.

16 The scope of the potential improvements that we
17 considered included hardware modifications, procedure
18 changes, and training program improvements.

19 The scope of the SAMAs that were considered
20 include SAMAs that would prevent core damage as well as
21 SAMAs that would improve containment performance, given
22 that a core damage event were to occur.

23 The SAMA Evaluation Process consists of four
24 steps. The first step is to characterize overall plant
25 risk and the leading contributors to risk. This typically

1 involves extensive use of the plant specific Probabilistic
2 Safety Assessment Study, which is also known as the PSA.

3 The PSA is a study that identifies different
4 combinations of system failures and human errors that
5 would be required to occur in order for an accident to
6 progress to either core damage or containment failure.

7 The second step of the process is to identify
8 potential improvements that could further reduce risk.
9 The information in the PSA, such as the dominant accident
10 sequences, is used to help identify plant improvements
11 that would have the greatest impact in reducing risk.

12 Improvements identified in other NRC and
13 industry studies as well as SAMA analyses for other plants
14 are also considered.

15 The third step in the evaluation is to quantify
16 the risk reduction potential and the implementation costs
17 for each improvement.

18 The risk reduction and implementation costs for
19 each SAMA are typically estimated using a bounding
20 approach. The risk reduction is generally over estimated
21 by assuming that the plant improvement is completely
22 effective in eliminating the accident sequences it is
23 intended to address.

24 On the other hand, the cost estimates are
25 generally under estimated by neglecting certain cost facts

1 such as maintenance cost and surveillance cost that would
2 be associated with the improvement.

3 The risk reduction and cost estimates are used
4 in the final step to determine whether implementation of
5 any of the improvements can be justified; and in
6 determining whether an improvement is justified we look at
7 three factors.

8 We look at whether the improvement is cost
9 beneficial. In other words, is the estimated benefit of
10 implementing the SAMA greater than the estimated
11 implementation costs.

12 The second factor is whether the improvement
13 provides a significant reduction in total risk. For
14 example, does it eliminate an accident sequence or a
15 containment failure mode that contributes to a large
16 fraction of plant risk.

17 And the third factor is whether the risk
18 reduction is associated with aging effects during the
19 period of extended operation. In which case, if it was,
20 we would consider implementation of the SAMA as part of
21 the license renewal process.

22 The results of our evaluation are summarized
23 here. Approximately 135 candidate improvements were
24 identified for each of the Browns Ferry units based on
25 review of plant specific PSAs, relevant industry and NRC

1 studies on severe accidents, and SAMA analyses performed
2 for other plants.

3 TVA reduced the number of candidate SAMAs to 43
4 based on a multi-step screening process. Factors
5 considered during the screening included whether SAMA is
6 not applicable to Browns Ferry due to design differences,
7 or might have been already been addressed in the existing
8 Browns Ferry design procedures or training programs.

9 A more detailed assessment of the conceptual
10 design and the costs was then performed for each of the 43
11 remaining SAMAs. This is described in detail in Appendix
12 G of the Supplement for Browns Ferry.

13 The detail cost analysis shows that none of the
14 SAMAs would be cost beneficial, even if uncertainties in
15 the analysis are taken in to account.

16 So, accordingly, our preliminary conclusion is
17 that no SAMAs are required to be implemented at Browns
18 Ferry as part of license renewal.

19 This concludes my presentation on the SAMAs.

20 MR. CAMERON: Thank you, Bob.

21 I believe we have a question back here.

22 MS. MUSE: Well, I understand -- I think the
23 surface level of your process, but I'm wondering just on a
24 layman's level what would happen. Despite all the SAMA
25 and the other terminology you referred to, what would have

1 happened in 1975 or what can still happen if there was a
2 mechanical failure and we did have a melt down? I would
3 like to know, you know, here in this room, what would
4 happen to the ground water.

5 MR. PALLA: What would happen to?

6 MS. MUSE: Yes, if we had a melt down.

7 MR. PALLA: To ground water. Well --

8 MR. CAMERON: In other words, Bob, this may be
9 out of your area because what Nancy is assuming that all
10 of these preventive measures fail and that there's
11 actually is an accident and what would be the effect on
12 the ground water. I don't know if any of us want to
13 speculate on that, except to say that it obviously is not
14 going to be a good event.

15 MR. PALLA: Let me just begin by saying that all
16 of these postulated events are not equal. Some are more
17 severe than others. You can have a core damage event that
18 core damage is arrested in vessel. The core may never
19 leave the vessel, the radiation may still be contained
20 within the containment. It could be a TMI type accident.
21 So not all accidents result in full blown core melts,
22 failure of the vessel. Even if the vessel failed, the
23 core damage could still be arrested within the
24 containment.

25 There are severe guidelines that have been

1 implemented at plants, including Browns Ferry, that direct
2 operators to add water to the containment, to the dry
3 well. So in the event the reactor vessel would fail, and
4 the core would melt through it, there would be water in
5 the dry well, and that this water could quench the debris
6 as it leaves the vessel. So it would be arrested there.
7 Again, it would be contained.

8 There are certain measures -- in the event that
9 all of those measures fail the core melt isn't a China
10 Syndrome, like in the movies. The molten core debris
11 eventually is quenched. It takes many, many hours to
12 breach a concrete base.

13 Over the course of -- probably on the order of a
14 day or more, typical time associated with base melt
15 through, certain measures could be taken to confine the
16 fission products.

17 MR. CAMERON: Thank you, Bob.

18 Mike, you are going --

19 MR. MASNIK: We also had some experience
20 unfortunately on this at Three Mile Island where we did
21 have a core melt, and we did have a relocation of 33 tons
22 of the core to the bottom head of the vessel. The system
23 worked. I mean it essentially contained the molten core
24 and there was no release of material through the bottom
25 head.

1 Subsequent to that, there was some contamination
2 and some of that contamination found its way through the
3 concrete base mat in one of the auxiliary buildings. It
4 did get into the ground water but it didn't move very
5 much. It turns out that very often the radioisotopes are
6 attached to clay particles, so we didn't see much movement
7 of most of the radioisotopes that were released from the
8 facility.

9 You can speculate a lot, but we have a little
10 experience in that area as well.

11 MR. CAMERON: Thank you, Bob; thank you, Mike.
12 Jackie.

13 MS. TIPPER: The Browns Ferry reactors are a BWR
14 mark IGE-4 design which has numerous inherent safety flaws
15 including elevated spent fuel pools that are vulnerable
16 from above, and above-ground reactor and a thin steel
17 shell in place of the traditional containment dome.

18 Now, I don't know about you all, but the worst
19 case scenario after 911 to me was somebody flying a great
20 big jet into the reactor. And it is my understanding that
21 this plant could not withstand that type of accident.

22 Also, that the building that the control
23 mechanisms are in does not have a real strong enforcement
24 on it, as well as the above-ground storage.

25 This is a major concern. I've thought about it

1 many times. I live right across the river. I'm on the
2 other side of the river. I'm a school teacher. You know,
3 I teach children. This is something that we think about.

4 MR. CAMERON: That's why it is particularly
5 important for you to be here and for us to provide you
6 some information about security generally.

7 Specifically, if Andy or any of the others can
8 talk about any studies that have been done in terms of,
9 you know, aircraft, this type of design, whatever, I'll
10 turn it over to you.

11 MR. KUGLER: I don't have any specific details
12 on this particular design, but even before 911, NRC took
13 security of these plants very seriously. And since 911,
14 obviously, we've taken a lot of steps to even go further.

15 There have been a number of orders and
16 advisories to the plants to beef up security. A number of
17 changes have been made to improve security at the plants,
18 and the staff is continuing to evaluate what other changes
19 may be appropriate. Obviously, there's a lot of that.

20 Even if I have the information, I couldn't
21 really say much about it because of the nature of the
22 information. But because it is not something I need to
23 know I don't even have it.

24 In terms of the way we look at accidents in an
25 Environmental Impact Statement, we don't specifically look

1 at leveling events, you know, attacks on the plant. What
2 we do look at is what things would have to fail, for
3 whatever reason, whether it be because of an equipment
4 failure or because of some intention act, what things
5 would have to fail to lead to these sorts of accidents.

6 In the sense that we look at the worst case sort
7 of accidents, we do that. We don't look at specific
8 causes such as some external force or starting the event.

9 I don't know if that helps, but I think that's
10 probably all I have that I could add at this point.

11 MR. CAMERON: And I think, Barry, we do have a
12 little bit of a summary of some things that we've been
13 doing that provide you with some more detail on that.

14 Grant.

15 MR. DORSEY: My first question actually is, how
16 many people are here that are not with the NRC or TVA?

17 (Hands raised)

18 So we have five people. Six.

19 Is a transcript of this going to be made
20 available or disseminated through -- I don't live in this
21 county. I live across the river in another county. I
22 live 15 miles down the river, so whatever happens here,
23 you know, it goes down stream. So my involvement is just
24 as much as anybody that lives in this county where these
25 notices were posted and so forth. They never got to where

1 I live. So I'm interested in that.

2 You were talking about cost of risk reduction
3 and whether the cost to the supplier (TVA) to reduce a
4 risk is worth what? Is it worth having a leak for the
5 money it is going to cost them to fix it? You talked
6 about evaluating the cost of that reduction. The cost
7 benefit analysis.

8 Do you ever think about -- when you build
9 buildings, when you build a surgical center, you expect at
10 some point to recoup that cost the ten billion dollars
11 that it cost you to build that surgical center, eventually
12 at some point it is going to be paid and you are actually
13 going to start making money.

14 Do you guys ever take into consideration the
15 cost of -- what a facility costs to build, and is it ever
16 going to pay for itself 20 years down the road? Will TVA
17 ever recoup the cost of those billions of dollars to
18 reactive this unit in my life time? If not, why are we
19 doing this? Why are they doing it?

20 MR. CAMERON: Can we address this?

21 MR. PALLA: I'll probably start with that one
22 and work backwards as best I can. I hope I can remember
23 the question.

24 Let me start with that one. From the NRC's
25 perspective it is not really relevant to us whether they

1 recoup their cost. That's a decision they make. I assume
2 they're only going to make a decision like that if they
3 feel they can recoup the cost. But for us, that's not a
4 concern for us. Our concern is safety. So that's a
5 simple answer to that part of that question.

6 In terms of why we're looking at cost benefit
7 when we're looking at these improvements, the best way to
8 explain that is, our regulations require them to operate
9 within a certain box. As long as they stay within that
10 box, they should be -- they're operating safety. Okay.

11 What we're doing here is saying, okay, you're
12 inside the box; you're operating safely. That's all good.
13 Are there any other things that you could do that might
14 even make it better? Not necessarily required but they
15 could still make it better.

16 Then, if we find some things that look like,
17 yeah, these are things that could improve performance in
18 certain accident sequences, then we say, all right, is it
19 worth the possible benefit that you can get out of it.

20 The thing is that plants have looked at severe
21 accident analysis since the 80s, and issues they've
22 identified -- vulnerabilities that they've identified in
23 their plants have already been dealt with. So at this
24 stage, this far along, we're not likely to find very much,
25 but we still look.

1 Usually, most of the things we are finding now
2 are things that are relatively low cost. Perhaps some
3 additional training or procedure changes. But that's why
4 we look at cost benefits because we're already in the
5 place where the plants are being operated safely, and
6 we're just looking at places where maybe there can be some
7 improvements.

8 MR. CAMERON: Can we send Grant and others a
9 copy of the transcript?

10 MR. PALLA: If you signed up on the card and
11 asked to be put on the mailing list, everybody on our
12 mailing list is going to get a copy of the meeting
13 summary, and will also get a copy of the Final
14 Environmental Impact Statement when it is issued.
15 Automatically, we just send that out.

16 In terms of how other people can reach it, we do
17 put these documents -- the Environmental Impact Statements
18 themselves are directly on the web page. Other documents
19 that either we issue or we receive from licensees are
20 available through our document management system, which is
21 also accessible through our web page. Anybody from
22 anywhere can get at these documents.

23 MR. DORSEY: If they're aware that they're
24 there.

25 MR. PALLA: If they're aware that they're there.

1 I understand that. That's where the mailing list comes
2 in. When people sign up or come into these meetings and
3 give us the information, we will send them that
4 information. Beyond that, you know, how would you reach
5 everybody in however many counties? There is no way to do
6 it. The people have to -- well, you know, you can't. I
7 can't mail it to everybody in the surrounding counties,
8 but we do make it available on the web so that anybody can
9 get at it if they have an interest.

10 MR. CAMERON: And you are going to get some more
11 paper.

12 Let's take another question and, then, go to the
13 summary, and listen to you a little bit more formally.

14 Nancy.

15 MS. MUSE: I appreciate the knowledge and wisdom
16 of many folks in this room that know a whole lot more
17 about this technology than I do. And with all due
18 respect, I'm a school teacher also, and I have two
19 questions or statements. And I'm not accusing anyone of
20 actually willingly participating in the comedy of the
21 absurd or the comedy of errors, but it seems like we are
22 dancing around the main issue.

23 All the studies on issue, I really appreciate.
24 Thank you for doing your job. I know you are doing the
25 best you can. But one reason why there is only five of us

1 here is because people in this area don't ask questions.
2 They hear what's in the news or in the newspaper and they
3 don't dig deeper. And with all of these wonderful studies
4 you've done, it still does not address the most crucial
5 issue concerning the operation of this plant.

6 We came seriously close in 1975 to a very major
7 accident, which was reported on the East and West coast
8 before people in this area knew what had happened.

9 We have politicians who are unopposed to nuclear
10 energy and nuclear power who suppress the stark, cold
11 reality (static)...

12 Also, the issue of radioactive waste from this
13 plant, I would like to have a history of where this waste
14 has gone, what kind of waste has gone where, where is it
15 going now, how much of it is still stored on the site. A
16 lot of people don't understand that we have a nuclear
17 waste ground right here in our back yard. And somebody
18 are naive and oblivious to the realities of this
19 technology.

20 Like I said, it seems like the talk tonight is
21 very useful. And I do know that you're doing the best you
22 can, but we're dancing around the issue. We're playing
23 ring-around-the-rosy.

24 Jackie mentioned 911. We all thought these
25 worst case scenarios were ridiculous and are never going

1 to happen; that people projected that this could happen 30
2 years ago or if not longer, and now we're in the age of
3 the worst case scenario. I think it is absurd not to be
4 addressing these issues primarily and foremost, especially
5 since the citizen's money is going to fund these projects
6 without them having all of the information out there in
7 front of them. I think it is really immoral. And I'm not
8 blaming any one person in this room because you're doing
9 your job. The technology is here. We did not invent it;
10 we're dealing with it.

11 But I think it is time to phase it out and I
12 would like for everyone in this room to please consider
13 looking at options to restarting these plants.

14 Thank you.

15 MR. CAMERON: Thank you. I think that was more
16 in the form of a comment. Thank you, Nancy. I think that
17 my colleagues would say that we're trying to address the
18 issue to make sure the plants are safe. Our
19 responsibility -- in fact, the only thing we are
20 authorized to do is to consider whether the plants are
21 safe and meeting our safety regulations. And if they do
22 that, then they can operate it unless something changes on
23 the congressional level.

24 Mike, do you want to talk about conclusions.

25 MR. MASNIK: Turning to our conclusions now, we

1 found that for license renewal, the environmental impacts
2 are small in all areas.

3 When we examined alternatives to license
4 renewal, including the no action alternative, the
5 environmental impact range from small, to moderate, to
6 large.

7 Based on these results, our preliminary
8 conclusion is that by operating the Browns Ferry Nuclear
9 Plant Units 1, 2, and 3 for an additional 20 years, the
10 impacts would be small. Therefore, the option to renew
11 the license should be preserved for energy-planning
12 decision makers.

13 Next slide.

14 As I mentioned before, the Draft Environmental
15 Impact Statement was made available to the public on
16 December 10, 2004. So what happens next?

17 Well, we're in the middle of a 75-day comment
18 period that runs until March 2nd, 2005. After that, we
19 will review and consider the comments received at today's
20 meeting, as well as any written comments we receive during
21 the comment period.

22 Then, we will modify the Environmental Impact
23 Statement after considering all the comments and release a
24 final draft by the end of July of this year.

25 Next slide provides the NRC's point of contact

1 for the license renewal and provides the address of a
2 repository for documents pertaining to the environmental
3 review.

4 I am the agency point of contact, and the
5 Athens-Limestone Public Library at 405 East South Street,
6 Athens, Alabama has agreed to make documents related to
7 the environmental review available to the public.

8 Single copies of the Environmental Impact
9 Statement are available today from Etoy in the back of the
10 room.

11 For those of you that prefer to review documents
12 in front of a computer screen, the Draft Environmental
13 Impact Statement is available at the web address at the
14 bottom here.

15 So, outside of this meeting today, there are
16 three additional ways you can provide us with comments.
17 One is by writing to us at this address, my address; the
18 second way is by dropping off your comments to me in
19 person, up in Rockville; and the third, we've set up a
20 special email address just for the Environmental Impact
21 Statement. And this address is: BrownsFerryEIS@NRC.gov.

22 As I said, all comments will be considered in
23 our final Environmental Impact Statement.

24 In conclusion, I want to take time to thank you
25 for attending the meeting for this very important process,

1 and please take the brochures and other information back
2 with you.

3 As I mentioned, we have single copies of the EIS
4 available for you to take home.

5 Thank you.

6 MR. CAMERON: Thank you, Mike.

7 Before we go to comments, Jackie, do you have a
8 question us?

9 MS. TIPPER: I would like those questions Nancy
10 presented concerning the waste to be answered and to know
11 specifically is plutonium produced from nuclear plants,
12 isotopes half lives, you know. I would like for the waste
13 to be addressed.

14 MR. CAMERON: You just had a question that you
15 raised now about plutonium. Is there anyway -- I think,
16 Nancy, you asked about how much spent fuel, basically, is
17 produced by one of these plants. Can we generally address
18 that as well as what the elements are? I mean I want to
19 try to do this. These are important points, but I would
20 like to try to do it simply, if we could, right now.

21 Mike, I don't know if we can or if you are the
22 right person, but I think you sense what the type of
23 information is that Jackie and Nancy would like to hear,
24 which talks about volume, quantity, and potential
25 toxicity, I guess.

1 MR. MASNIK: I'll answer the simplest question
2 first, and that is, during nuclear reaction in the reactor
3 core, plutonium is produced and it is one of the fission
4 products. That plutonium, of course, is part of the spent
5 fuel and it is considered self-protecting in that it is so
6 radioactive that it would be very difficult for someone to
7 get very close to it.

8 The question on waste, I can't give you a
9 precise number of the volume or the weight of waste that
10 is produced. But I've read accounts where the amount of
11 high level waste that is generated by a plant during one
12 year of operation could fit underneath one of these
13 tables. It is not -- I mean, it is the form of long rods
14 now, but if you disassemble those rods and put that amount
15 of material in a container, it would be about the size of
16 one of -- it would be able to fit underneath one of these
17 tables.

18 That waste is currently stored on site. There
19 is no place at this time to ship that waste. The waste is
20 stored in spent fuel pool, in a wet environment (in a
21 pool, under water) and the licensee also has plans to
22 store the fuel in dry storage, in an independent spent
23 fuel storage facility, or ISFS site until a permanent
24 high-level waste repository is available, and then the
25 fuel will be shipped there and disposed of permanently.

1 MR. CAMERON: Two followups on that and then
2 we're going to go to the next part of the meeting.

3 Nancy.

4 MS. MUSE: Well, it goes against common sense to
5 plunge forward with this technology when we've had years
6 to find this permanent repository or depository for the
7 spent fuel.

8 Science is wonderful, but it doesn't compare
9 with common sense then it's not very useful.

10 If you have a toilet that's clogged up, you
11 don't keep using the toilet.

12 I have concerns too. I think more people would
13 be here tonight if these kinds of issues were in the
14 newspaper, if the politicians didn't stifle this
15 information, which I know does happen. If you start
16 talking about transporting this highly radioactive
17 material across the country to Utah or out west to the
18 Rocky Mountains, there are going to be people in those
19 states that are going to not be happy. That's already
20 been proven to be true. And they're going to see people
21 very worried about the security of that transported waste.

22 And to me it is just absurd to have these kinds
23 of questions looming over our heads and to spend all of
24 this money to further this technology.

25 MR. CAMERON: Thank you, Nancy, we have that

1 comment on the transcript.

2 Jackie.

3 MS. TIPPER: One of the things mentioned in the
4 study has to do with the economic impact. Well, the half
5 life of plutonium is -- what is it(?) 240,000 years?
6 That's going to have to be guarded for that long. How can
7 we rationalize this to our children, to the future? We
8 don't even have a place to put it right now.

9 Like Nancy said, this really doesn't make any
10 sense.

11 The economic impact also. I mean how much money
12 is that going to cost? In this area right now TVA, their
13 estimated cost for restarting Unit 1 is 1.8 billion
14 dollars, which exceeds the U.S. Department of Energy's
15 highest cost estimate by \$100 million. TVA has an
16 existing debt of around 250 billion dollars and they don't
17 have much more room on that. This is being passed on to
18 their customers. This is a major concern here.

19 People are losing their jobs and there are
20 people considering -- no people, whole areas that are
21 considering not even using TVA power now. This is
22 something to think about, too. This is going to be on the
23 back of the future generations. We need to consider these
24 things, definitely.

25 MR. CAMERON: Thank you, Jackie.

1 MR. MASNIK: I understand the comment, and we'll
2 consider it.

3 MS. TIPPER: One more, okay? I know that you
4 won't go in and do the inspections and everything. Please
5 do a really good job, because on Unit 1 there have been a
6 number of whistle blowers that have lost their jobs.

7 One acquaintance of mine is an avid supporter of
8 nuclear power. He did his job; saw things that should
9 have been done in other ways, or were not being done
10 properly; he lost his job. Things like this are going on.

11 When we almost had the melt down with the first
12 accident, I knew some of the people that worked at Browns
13 Ferry, and one of them was a operator who was a severe
14 alcoholic. He was killed in a car wreck on the way to
15 work, on the way to work.

16 I thought okay, it's better now. We don't
17 really have to worry about this, you know. TVA has
18 really cleaned up their act and they're doing a better
19 job. Then, when I hear about all of these whistle blowers
20 with Unit 1, that's scary. That's really scary. And I
21 did know this guy, and he was an operator.

22 You all have got to do the very, very best that
23 you can to make sure that everything -- if it happens,
24 it's done really right.

25 How many other plants in the United States have

1 been relicensed? Aren't most people getting away from
2 nuclear power? Renewable energy sources. If we had just
3 put the money that we poured in to nuclear power toward
4 renewable energy sources and conservation. We don't do
5 squat with conservation. We could save billions and
6 billions of dollars just with conservation.

7 MR. CAMERON: One thing we can get is the number
8 of license renewals. And at the risk of you getting one
9 more piece of paper -- because he's thinking over there --
10 we do take very seriously allegations from people who
11 raise safety concerns.

12 With that, Barry, could you bring that pamphlet
13 over for Grant and Jackie.

14 Thank you for that admonition and we take that
15 seriously.

16 MR. MASNIK: I just want to say the number is
17 about 20, 21 have had their license renewal, and 21 units
18 and not necessarily sites. We have five or six inhouse
19 now. There have been quite a few. And we do take our job
20 very seriously. I want you to know that.

21 MR. CAMERON: We're going to move on to the
22 formal comment part of the meeting. We can come back if
23 there's another question, but I really would like to get
24 you on and get it on the record.

25 Usually, when we do these, we find it useful to

1 have people here just generally, before they talk what the
2 rationale and the vision, so to speak, of the company is
3 in terms of license renewal.

4 We have Mr. Chuck Wilson as our first speaker
5 who is the License Renewal Environmental Management
6 Project Manager for TVA. Would you like to address us for
7 a few minutes?

8 MR. WILSON: Thanks, Chip. I'll be very brief.

9 Once again, I'm Chuck Wilson. I'm the License
10 Renewal Environmental Project Manager for TVA. I've got a
11 couple of comments to make.

12 TVA is reviewing also NRC's draft Environmental
13 Impact Statement and will be providing comments on or
14 before the comment period closes March 2nd.

15 TVA agrees with NRC's basic overall conclusion
16 that the environmental impacts of Browns Ferry License
17 Renewal are minimal. We can say that because being a
18 Federal agency we also have to comply with NEPA.

19 In the spring of 2002 we completed our own
20 Environmental Impact Statement which addressed Browns
21 Ferry License Renewal and Browns Ferry Unit 1 restart.
22 There were no significant environmental impacts, and we
23 did find that, in general, license renewal allows power
24 production without greenhouse gases, which is consistent
25 with TVA's clean air initiatives that you hear so much

1 about.

2 License renewal also maximizes use of existing
3 assets and it avoids the impacts of new site construction.

4 So, in general, we fully supported renewing the
5 licenses of Browns Ferry as a good thing to do.

6 Thanks. That's all I've got to say.

7 MR. CAMERON: Thank you very much.

8 We're going to go to Jackie. Would you like to
9 come up and comment for us? You can stay there and use
10 this, if you prefer, or you can come up there.

11 MS. TIPPER: I'll use this.

12 The major problem with nuclear power has to do
13 with storage of the waste. I don't think anybody has
14 really figured in how much this is going to cost. I don't
15 think they can. That's what makes nuclear power totally
16 unfeasible, and the possibility of accidents, even though
17 they might be very remote, would be so catastrophic that
18 we're going with this.

19 There are alternatives. There are answers to
20 clean air other than nuclear power. We have incentives
21 for solar power and conservation. There's nothing out
22 there now.

23 Jimmy Carter had great programs going for
24 getting people into renewable energy sources. We're not
25 doing any of that now. We can come up with solutions that

1 are safe that the generations ahead of us are not going to
2 have to take care of and guard and be afraid of. This is
3 what is just wrong. It is morally wrong what we're doing.

4 How can you tell children, you know, we can burn
5 all the lights we want to and it will be cheap. It is not
6 going to be cheap. It is expensive. TVA has spent a
7 fortune on their power. (static) ...Yellow Creek with
8 babies and backpacks...(static) ...they're grown up and
9 their activists also.

10 It was wrong then and it is wrong now. You all
11 can do your job the very best you can, but that waste is
12 still going to be there. And we don't have faith in the
13 human race, if this is the only way to go. We are too
14 short sighted. Everybody maybe thinks that the world is
15 going to end tomorrow, but we don't know. We're supposed
16 to be stewards. We don't know this.

17 And I sure wish there were more people that paid
18 attention and cared. So few people read the paper. Still
19 look at the elections -- I won't go there.

20 Amendment 2 failing. That's one of my main
21 peeves right there.

22 This is something that we really need to look
23 at, and the cost of it. I hear that they're talking about
24 -- well, no, not here that they're talking about, there's
25 been a huge grant to do a study for Bellefonte. And what

1 did we pump in to an endless pit there, four billion
2 dollars, was it? Four billion dollars for absolutely
3 nothing now. And now we're going off on some other
4 tangent.

5 Let's just try to do better.

6 MR. CAMERON: Thank you, Jackie.

7 Nancy, can we go to you and then we'll go to
8 Grant. Do you want to come up or do you want to use this?

9 MS. MUSE: I'm Nancy Muse, Florence, Alabama.

10 This may not be the most appropriate time for me
11 to voice this concern or make a comment about
12 responsibility, corporate responsibility or government
13 responsibility, ethical responsibility.

14 One of the guys that was involved in an accident
15 at Browns Ferry not too long after we had this meeting --
16 I guess it was last year, last spring, last April --
17 happened to be one of my old students when I taught him in
18 high school. And as fate would have it, our paths crossed
19 shortly after that accident.

20 He described to me what happened to him. He
21 inhaled radioactive particles or particulates and I cannot
22 envision exactly how it happened, but I believe it was
23 radioactive water or steam escaped into the air and he
24 happened to be there at the wrong time, and he inhaled it.

25 Now what really was totally immoral and absurd

1 that this nuclear industry from the uranium mining all the
2 way to the making of plutonium avoids any responsibility
3 when workers in the mines, Native Americans, on down the
4 line, pipefitters, get cancer. They always claim that it
5 had nothing to do with the exposure of those workers, and
6 somehow have gotten by with this.

7 There was a lawyer from Tennessee that
8 represented indigenous Native Americans back in, I guess,
9 the 70s who had their skin falling off, who had worked in
10 the uranium mines. The industry denied any wrongdoing or
11 any responsibility to help these people.

12 One of my lingering question marks is, this ex-
13 student is a great guy. He used to wear snakeskin boots
14 and have one of those little Billy Ray Cyrus haircuts back
15 in the 80s, loves life. One of these days if he gets lung
16 cancer or leukemia or some other form of cancer what is
17 TVA going to say to him: well, we had nothing to do with
18 it?

19 If I'm in the nursing home and I can still find
20 out what's going on, if I can make it that long, I'm going
21 to follow him around and I'm just going to see what
22 happens to him. I'm going to document it. I'm going to
23 make my own personal file on this ex-student of mine that
24 I love dearly and see what happens to him. And if this
25 industry is going to take the responsibility of what may

1 befall him. He's just one out of a thousand workers who
2 have not been in the reports because it isn't very good
3 for the industry to admit that these things have happened,
4 and no responsibility has been taken by the industry.

5 For now that's it.

6 MR. CAMERON: Thank you, Nancy.

7 Grant, do you want to talk to us.

8 MR. DORSEY: Well, one major comment is on the
9 economic side, as I mentioned earlier. If you build a
10 clinic, then at some point you expect that clinic to be
11 paid for before it starts making money.

12 TVA has spent \$2 billion dollars to restart
13 Browns Ferry Unit. Is it possible that TVA is going to
14 recuperate \$2 billion dollars from one nuclear reactor in
15 20 years? It doesn't seem likely to me that that's going
16 to happen.

17 They abandoned a \$360 million dollar project, a
18 gas-fired power plant a \$150 million dollars into the
19 project, and it was deemed lack of demand. That was in
20 March of '02. So from '02 to now we've come to the point
21 where we need to spend \$3 billion dollars to reactivate a
22 nuclear reactor, and I don't understand how it is going to
23 be paid for or how it is going to pay for itself. The
24 math doesn't work in my head. Maybe I don't know how to
25 add figures that big. It doesn't work for me.

1 MR. CAMERON: Thank you very much.

2 I think that's the last formal speaker that we
3 had. I know that Nancy was holding a question from
4 before. Do you still have a question?

5 MS. TIPPER: I had a question. What's another
6 ten minutes? Just kidding. It might take one minute.

7 This is just for the record. I'm Nancy Muse
8 from Florence, Alabama. I'm against TVA's future
9 commitment, or present commitment also, to the nuclear
10 program, regardless of the specific information within the
11 environmental assessment and/or environmental impact
12 statement.

13 The problems associated with short- and long-
14 term of handling of storage of nuclear waste far outweigh
15 the short-sighted continuation of this astronomically
16 expensive and dangerous technology, when we should be
17 committing money to renewable and sustainable alternative
18 energy sources, such as photovoltaics and wind power.
19 Which, when pared with conservation, is a much more
20 logical solution to our energy needs.

21 MR. CAMERON: Thank you, Nancy.

22 And I would just like to thank all of you for
23 your comments and bringing your concerns forward to us. I
24 think you can see from some of the things that the NRC
25 staff said about what we're doing here, the concerns are

1 always important to us. Some of the concerns we can try
2 to address because they're within our areas of
3 responsibility, but I think all of the concerns are
4 important to us as Americans in terms of larger policy
5 choices.

6 Thank you for your comments tonight.

7 I'm just going to ask Andy Kugler to close the
8 meeting for us. Andy.

9 If you can, please stay after the meeting
10 because the staff and our experts are here. If there is
11 anything else you want to talk about, if there's any other
12 documents you want to take home, we can get those for you
13 too.

14 Andy.

15 MR. KUGLER: I just wanted to thank you again
16 for coming out this evening.

17 One thing I did want to mention. In the packet
18 of materials that Etoy gave you when you came in, one of
19 the items was a Meeting Feedback Form. We look for ways
20 to try to do things better, and if you have some
21 suggestions on what we could do, we would certainly
22 appreciate that feedback. You can either fill it out now
23 and drop it off at the back, or its prepostage paid and
24 you can fill it out later and mail it in. Either way. It
25 will get to us and we can take a look at what comments you

1 may have.

2 Beyond that, as Chip mentioned, we will be
3 staying after the meeting. We would be happy to talk to
4 you about any questions you may have.

5 Other than that, thank you for coming again, and
6 drive safely going home.

7 Thank you.

8 (Whereupon at 8:44 p.m. the meeting was closed.)

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