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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INVESTIGATIONS

PUBLIC SCOPING MEETING

EVENING SESSION

Pages 1 - 46

Thursday, April 1, 2004

Athens State University
Student Center Cafeteria
300 North Beaty Street
Athens, AL

Evening Session - 7:30 p.m.

APPEARANCES:

Nuclear Regulatory Commission:

CHIP CAMERON
JOHN TAPPERT
MIKE MASNIK
CHUCK WILSON

M E E T I N G

(7:06 p.m.)

MR. CAMERON: Good evening, everyone.

My name is Chip Cameron. I'm the Special Counsel for Public Liaison, at the Nuclear Regulatory Commission. I would like to welcome you to the NRC's public meeting tonight.

Our subject tonight is the Environmental Review that the NRC is going to conduct on a application that we received from the Tennessee Valley Authority, TVA, to renew the operating licenses for the Browns Ferry Nuclear Power Plant, Units 1, 2 and 3.

I'll be serving as your facilitator for tonight to try to help all of you have a productive meeting.

Our format tonight is going to be a two-part format for the meeting. The first part is, we're going to have some brief NRC presentations to give you some background information on the NRC's process to review a license renewal application, such as the one that we received from TVA, and answer any questions that you have about the license renewal process. And particularly we're going to be telling you about the Environmental Review portion of that process.

Second part of the meeting is going to give you an opportunity to tell us any recommendations, advise,

suggestions, perspectives on license renewal, again on the Environmental Review process or broader issues.

We are taking written comments on these issues, but anything you say here tonight is going to count as much as written comment.

We are transcribing the meeting. Mr. Steve Anderson, over here, is our stenographer. That will be a written record of the meeting tonight. It will be available to anybody who wants a copy of the transcript.

I think probably we could just go to the introduction of our speakers from the NRC, tonight. We have Mr. John Tappert right here. John is the Chief of the Environmental Section in our Office of Nuclear Reactor Regulation.

John and his staff oversee the preparation of any environmental reviews that the NRC do for reactor issues, be it a license renewal application or an early site permit. John has been with the agency for about 14 years. He was a resident inspector for the NRC. He has a Bachelors degree from Virginia Tech in Aerospace and Ocean Engineering. A Masters Degree in Environmental Engineering from Johns Hopkins University. And John is going to provide you a welcome and a overview perspective on license renewal.

Then we’re going to go to the substance of the

license renewal process in the environmental review. Dr. Michael Masnik is here. He's the Senior Project Manager for the Environmental Review on this Browns Ferry license application. He is one of John's staff. Mike has been with the agency for 30 years. He has a Bachelors degree in Biology from Cornell. And also not just a Masters but a PhD in Ichthyology from Virginia Tech. Ichthyology being the study of fishes. Is that right?

Mike's dissertation, PhD dissertation was on the fishes of the Clinch River, a tributary of the Tennessee River.

I would just thank you for being here with us tonight. And we're interested in hearing what you have to say and answering any questions that you have about license renewal.

With that, John.

MR. TAPPERT: Thank you, Chip.

Good evening everyone and welcome. Welcome back for those returning from our matinee meeting this afternoon.

My name is John Tappert. On behalf on the Nuclear Regulatory Commission, I'd like to thank you for coming out here tonight and participating in this process.

I hope that you will find the information that we share with you tonight to be helpful. I look forward

to receiving your comments both tonight and in the future.

Now I'd like to start off our presentations tonight by briefly going over the purposes and agenda of tonight's meeting.

Now we're going to start off with a brief over view of the entire license renewal process. Now this includes both a safety review, as well as an environmental review, which will the principle focus of tonight's meeting.

Then we'll give you some additional information about that environmental review. Which will access the impacts associated with extending the operating licenses of the Browns Ferry Nuclear Power Plants Units 1, 2 and 3 for an additional twenty years.

Then we'll give you some more information about our schedule and how you can submit comments in the future.

Then we get to the real heart of tonight's meeting, which is to receive any comments that you may have tonight.

By way of background, the Atomic Energy Act gives the intercede the authority to issue operating licenses to commercial nuclear power plants for a period of 40 years. For the Browns Ferry Units, 1, 2, and 3, those operating licenses will expire in 2013, 14 and 16,

respectively. Our regulations also make provisions for extending those operating licenses for an additional 20 years, as part of a license renewal program. And TVA has requested license renewal for all three units.

Now as part of that review, the NRC will develop an Environmental Impact Statement. And we're very early in that process right now, in what we call scoping. Where we seek to identify those issues which will require the greatest focus during our review. After we make our preliminary determinations, we will publish a draft Environmental Impact Statement, next December. Then we will hold another public meeting here to receive any comments that you may have on that draft.

But again, the principle purpose of tonight meeting is to receive any comments that you have on scoping. With that I'd like to ask Mike to give us some more information about the review.

MR. MASNIK: Thank you, John.

I would also like to welcome each of you here tonight.

Once again, my name is Michael Masnik. I'm the Senior Environmental Project Manager for the Environmental Review of Tennessee Valley Authority, or TVA's application for the Browns Ferry Nuclear Power Plant license renewal. On January 6th, 2004 the NRC staff received an

application, from TVA. To renew the operating licenses for Browns Ferry's 1, 2 and 3.

Our License Renewal Review process has four components: a safety review, environmental review, plant inspections, and a final safety review by the NRC's independent oversight body, the Advisory Committee on Reactor Safeguards.

Essentially, the NRC's efforts result in two parallel reviews: a safety review, indicated in the upper portion of this slide, and a environmental review, that's given in the lower portion of this slide. This figure summarizes both the safety and environmental reviews and highlights opportunities for public involvement.

The safety review entails a detailed review of the licensee's application by headquarters, safety experts, on-site inspections by both our headquarters and regional staff, and a final review by independent over site organization within the NRC.

The safety review is focused on the review of the applicant's programs to identify and manage what we call passive, long-lived systems structures and components. These programs are the focus of the license renewal because our existing regulatory processes for operating nuclear power plants ensure, on an on-going basis, that active systems, structures and components are

inspected, maintained, and replaced, as needed, throughout the operating life of the plant. Also, existing programs verify that programs such as the emergency planning and security remain acceptable.

The review of the application results in the NRC staff publishing a license renewal safety evaluation report. That report, along with the results of the safety inspections, are forwarded to the Advisory Committee on Reactor Safeguards, or ACRS, the independent oversight board, I spoke of earlier.

The ACRS reviews the safety evaluation report, the inspection reports, and makes a recommendation to the Commission on the licensee's application.

While the safety review and inspection are occurring, the NRC staff is also conducting the environmental review.

The NRC staff summarizes its findings on environmental issues first in a draft Environmental Impact Statement, and then, after receiving public comment, a final Environmental Impact Statement.

During preparation of the final Environmental Impact Statement there are several opportunities for public involvement. This public meeting this evening is one of them.

At the end of all this activity, the final

Safety Evaluation Report, the final Environmental Impact Statement, and the results of the NRC staffs inspections, and the advisory committee's recommendations will be used by the Commission in making a final determination on whether of not to renew the licenses for Browns Ferry.

Opportunities for public involvement in this process are indicated by the splash marks on this diagram. The first opportunity for public involvement is the opportunity to file a petition to request a hearing on the renewed application. That opportunity began in early March and will close in early May. The process requires that a petition be submitted to the NRC to hold hearings on issues that would be litigated by a panel of administrative judges.

The next opportunity for public involvement is today's meeting. Which is part of the environmental scoping process. In this scoping process we determine the issues that we need to be address in our environmental review.

The next opportunity for public involvement will be when we request comments on our draft Environmental Impact Statement. Additionally, oral and written statements can be provided during the Advisory Committee on Reactor Safeguard's meeting for this facility.

In addition to these opportunities throughout

the process, members of the public, who have nuclear safety concerns, can raise those issues during meetings open to the public that the NRC will hold to discuss the review of the Browns Ferry application.

Meetings on particular technical issues are usually held at NRC headquarters, outside Washington. However, some technical meetings and meetings to summarize the results of the on sight inspections are typically held near the plant site, and may be attended by members of the public.

I'll now provide a little more detail regarding our environmental review process, which is the subject of today's meeting. The National Environmental Policy Act, or, as we refer to it, NEPA is a congressional mandate, enacted in 1969, which requires all federal agencies to use a systemic approach in considering environmental impacts, during certain decision making proceedings.

The law functions as a disclosure tool that seeks public involvement. It mandates a process in which the information is gathered to enable the federal agencies to make informed decisions. And then as part of the process, we document that information, make it all publicly available, and invite the public to participate in its evaluation.

The NEPA process for license renewal results in

Environmental Impact Statements, also called an EIS, which describes the results of the detailed review that we do. Our review considers environmental impacts of alternatives to the purposed action as well. Including what we call the no-action alternative, which would be simply not to approve the request.

We also look at impacts of constructing and operating alternative power generating facilities. Today we're in the process of gathering information we need to prepare our Supplemental EIS. In particular at this stage we're performing what we call "scoping."

The NRC is having this meeting as part of our scoping process for the purpose of providing you and other governmental agencies with the opportunity to provide us with information that you believe may have some bearing on the environmental evaluation.

Again, in particular, we're looking for information that may not be readily available or concerns that people might have that have not been addressed by the TVA in their application.

This next slide describes the objective of our environmental review, as it is stated in our regulations. To paraphrase, we're trying to determine whether or not renewing the Browns Ferry license for an additional 20 years is acceptable from an environmental stand point.

I should emphasize that if we conclude that the license renewal is acceptable from an environmental prospective, all that means is that it would be environmentally acceptable for TVA to operate Browns Ferry for an additional 20 years.

The NRC does not determine whether they actually operate for those additional 20 years. That decision is made by TVA.

It is possible that the utility could determine that it is not economically feasible to continue operating, even though it may be environmentally acceptable.

This environmental review may seem strikingly familiar to some of you. I'm sure some of you are asking: Didn't we already do this? And didn't we do it recently? The answer to both questions is yes and no.

The Tennessee Valley Authority is a federal entity and is required to comply with the National Environmental Policy Act, just like the NRC.

In February of 2001 TVA began it's NEPA process by publishing a notice of intent to prepare an EIS, to determine whether to pursue license renewal. This effort culminated in publication of TVA's EIS, entitled, "Final Supplemental Environmental Impact Statement for Operating License Renewal of the Browns Ferry Nuclear Plant in

Athens, Alabama." And it was dated March of 2002.

So why then is the NRC preparing another EIS for a license renewal at the same plant? Well, there are a couple of reasons. The first, and probably the most important is a legal one. TVA is authorized by congress to construct and operate power plants. Therefore its actions to generate electricity are just like any other private power producer. Even though it is a federal agency, it cannot issue itself a license to operate a nuclear power plant.

The NRC is a regulatory agency charged with insuring that nuclear material can be used, while protecting public health and safety.

The NRC does not operate nuclear power plants; however, it does license them.

As a regulatory agency the NRC is required to conduct an independent assessment of potential impacts associated with renewing power reactor licenses for an additional 20 years of operation.

The three units at Browns Ferry are much like those of the other 101 units regulated by the NCR else where in the United States.

Secondly, the NRC staffs environmental evaluation is expected to be contemporaneous with the Commission’s decision either grant or reject TVA’s license

renewal application. TVA's Environmental Review is already several years old. So that the staff will consider whether there is new and significant information available that would affect its review.

In the end TVA's NEPA obligations are different from the NRC's. Nevertheless, the NRC and its predecessor, The Atomic Energy Commission, recognizes the unique standing of TVA as a federal agency, and has permitted to TVA to submit its EIS in partial fulfillment of the requirements to submit an environmental report.

Let's get back to NRC's Environmental Review process. This next slide gives a little more detail on the environmental portion of the review process, including some dates for the milestones in the process.

TVA's application was received on January 6th, of this year. On March 10th of this year we issued a notice of our intent to perform scoping, which is what we're doing now, and our intent to develop a supplemental Environmental Impact Statement for the proposed action.

We're currently in a data gathering phase to determine the environmental impacts of renewing license. After we collect the data, we will develop a draft Environmental Impact Statement, which we expect to issue for public comment in December of this year.

We'll also come back early next year for another

public meeting to talk about the results of our review and to provide an opportunity for the public to provide comments that they may have on our draft Environmental Impact Statement.

After receiving and evaluating any comments, we will then develop the final Environmental Impact Statement, which we hope to issue in July of next year.

We're gathering information for our evaluation from a number of different sources. This is a partial list of sources of data for our review. This week we were at the site to review TVA's procedures for managing environmental impacts and to observe first hand, how the plant interacts with the surrounding environment.

We are also meeting with Federal, State and local government officials and we will consider all comments received from the public during this comment period.

This slide shows the range of environmental topics our team is reviewing. Impacts considered include such things as air quality, water quality, the effects on plants and wildlife. We also look at what we call socio-economics, or how the plant affects peoples lives economically in the surrounding communities.

We have assembled a team of NRC staff and experts from the national labs, with backgrounds in these

technical and scientifically disciplines in order to perform our environmental reviews. Some of whom are with us tonight.

To summarize a few key dates, our schedule is to complete the scoping process by May 9th, when the public comment period ends. After that, as indicated, we plan to issue a draft Environmental Impact Statement in December of this year, and to issue a final Impact Statement in July of next year.

If you'd like to receive a copy of the draft, and final Environmental Impact Statements, please fill out a card with Tomeka up at the registration desk.

This slide provides contact information in case you have additional questions after you leave the meeting today.

I'm the designated point of contact within the NRC for the environmental portion of the license renewal review.

Although you're welcome to contact me with any questions, if you have comments and wish to have them addressed in our review, they must be provided in writing or, as Chip has indicated, in this meeting, where they will be transcribed and will be the equivalent of a written comment.

Arrangements have been made for the documents

associated with the environmental review to be locally available. The Athens Limestone Public Library, in Athens, Alabama has been kind enough to make some shelf space available for documents related to the environmental review. Also, documents are available through our on-line document management system, which is a accessible through our internet home page, which is indicated right down here.

After this meeting comments can be submitted by mail, in person, if you happen to be in the Rockville, Maryland area, or by e-mail at the address shown here. We've established a web sight that -- actually an e-mail address that you can e-mail your comments directly to the NRC. I receive them in my office.

That concludes our formal presentation on the environmental review process. In closing I'd like to thank everyone for attending, and for your attention during the presentation. We look forward to any comments you might have.

MR. CAMERON: Thank you, Mike and thanks, John.

Do we have questions on license renewal process, any aspects of it?

Okay. Do you have a question? Do you have any questions about anything? Do you want to ask any? For questions and then we're going to go to people for more

formal comment. But if there is anything that you'd like to explore further, further information.

MS. MUSE: I'm Nancy Muse from Florence, Alabama. I haven't been to an NRC meeting like this since the '80's. So I'm a little rusty. I wanted to know what the proposed dates were for decommissioning the units, and when they were originally built.

MR. CAMERON: Mike.

MR. MASNIK: I don't believe that the licensee had any proposed dates for decommissioning. But when we issue a license for a nuclear power plant, it's for a 40 year period, the initial license period.

So, basically, if you assume that the license runs for 40 years, it would be at the conclusion of the license which would be 2013, 2014, and 2016. However, the licensee has determined that they want to pursue a license renewal for an additional 20 years. So, tack on 20 years to those dates and that would then be the potential decommissioning date.

MR. CAMERON: Does that answer that question for you?

MS. MUSE: I wondered if the dates given, that you just mentioned were the original dates given for the life of the plant?

MR. MASNIK: Yes.

MR. CAMERON: When does the license for these plants expire? Those are the dates; right?

MR. MASNIK: When the license is issued, it actually has a specific date at the bottom of the license. And those are the dates that were on the license.

MR. CAMERON: Okay, anything else, Nancy?

MS. MUSE: I don't tonight, if you're going to explain the technology that would enable these plants to be considered safe for an additional 20 years.

Of course, I don't claim that I would understand everything about the technology, but I wondered are we going to have an overview, to see why we should believe it's okay for them to be extended another 20 years.

MR. CAMERON: Mike, I don't know if this is your area, or whether John or perhaps Jimi can tell us. Perhaps just a little bit more about the types of aging issues that we look at. And also, what types of actions a licensee might take to prepare for renewal in terms of not necessarily adding new technology but replacing components.

I don't think we can go in to a lot of detail on that, but perhaps we could give Nancy a little bit of an idea on those issues.

Jimi, do you feel comfortable doing that? Okay. Jimi is the project manager on the safety side of the

evaluation as opposed to the environmental side. It's Mr. Jimi Yerokun.

MR. YEROKUN: Thank you. Let me try to explain that question. The process of reviewing the application for renewal takes a period of over two years. One of the key things that we do is, the applicant identifies the structures of the plant that need to be subject to aging management reviews. Because that's the ones that are focused on as to what the aging effects on there components and structures, and how the applicant justifies that those conponents and structures, based on those aging effects will be able to operate for under 20 years.

So it's a process of trying to identify which equipment or components need to be closely looked at and analyzed for the effects of aging.

The bottom line is trying to justify that, for an additional 20 years, those components and structures will, in fact, support the plants.

I said that it was simple, but it's a tedious process of really trying to focus on what are those components and structures.

You have to have a way to manage those structures and components so that's the, I guess, a short response to that. I hope that does it.

MR. CAMERON: All right. Thanks Jimi.

Did that give a little bit of an idea of the types of things that are examined, and I guess if something needs to be replaced -- In other words, we look at the structure systems and components that may be vulnerable from an aging point of view; do analysis on those. And if there's anything questionable, Jimi, we require the licensee to do something about that? Is that correct?

MR. YEROKUN: Yes, I believe what we do is ultimately verify that the analysis the licensee has in place to assure that the aging effects would be acceptable for the additional 20 years is accurate. If there is discrepancies in those reviews, we ask for clarifications, or for supplemental analysis that shows that no real discrepancies remain, bottom line is, before the license renewal is granted, all those discrepancies that exist will have to have been clarified. So that we have adequate assurance that, in fact, there is no additional aging effects that will impact the confidence of structures for another 20 years.

MS. MUSE: Who are the inspectors that look into the different components that may be vulnerable to aging? And are those reports made public?

MR. CAMERON: Good question. First of all, let me introduce our resident inspectors, who are at the plant

to make sure that NRC regulations are complied with. They live here in the community.

And then if I could get -- I don't know if either one of them want to address this special inspections, but if someone could talk about the inspection component that we do.

But let me introduce these guys first. This is Bob Holbrook, right here, and Bob Monk. They are our resident inspectors.

Bob, do you want to say anything in response to that?

MR. HOLBROOK: Hi, I'm Bob Holbrook. I'm a Senior Resident Inspector at Browns Ferry for the operating units. I live in Decatur.

We inspect the plant on an on-going basis everyday. There's four of us assigned at the plant. We do our routine inspection that's laid out from the headquarters in Washington.

For the license renewal inspections, and the aging inspections, we have special inspectors that come from Atlanta, in the office in Atlanta, and from headquarters. And they have several inspections scheduled and there will be teams of inspectors, or individual inspectors that will come over at particular times, on a regular scheduled basis and look at these scheduled

inspections that we have.

They'll pretty much look at everything in the plant that has to be inspected and provide feedback to the public. Those reports are available to the public on the NRC web page. So any of you that gets on the internet, can take a look at those and read them and see what the inspectors find.

MR. CAMERON: Thanks, Bob.

Jimi, do you want to add? Okay.

Let's go to this gentleman here. Yes sir, and please introduce yourself.

MR. NORTH: Hi, my name is Jeff North. I am a resident of Huntsville. I've got three quick questions for you. I was talking with the TVA gentleman before the formal meeting started. I asked why a 20 year extension? And they said that's easy, that's what the law provides for us, not 10, not 30.

MR. CAMERON: First question, why 20?

Barry, this is Barry Zalcman, an NRC staff. He's an expert on 20 years.

MR. ZALCMAN: When the Commission provided direction to the staff, one of the underlying basis of why 40 was one of the questions that were raised. The why 40 was really tied to economic factors, and to trust issues. They were not design issues.

Use of nuclear material was a new technology, if you go back into the 50's and 60's and early 70's. We really hadn't had much experience, but the designs that had been put in place were very robust designs.

Performance of these facilities has been, we think, safe. But it's even been improving over the past several decades. That's a good thing but the reality is equipment ages.

Now the 40 year period was established previously as a good benchmark, a good design mark for engineering applications.

The 20 year mark is just some reasonable time frame that we believed could be used as a basis to look at aging effects.

As a basis to look at extended operation we don't look at the economic factors associated with whether or a not a licensee would pursue license renewal. That's a business decision that they have to make.

Our focus is on safety, our focus is on security, our focus is on environmental issues.

Now the 20 year period was a reasonable time frame. And it also preconditions that you have to have some reasonable experience to understand aging at the facility. So no licensee can come in for license renewal under the regulations, absent the request for an

exemption, without some experience in this case. It's also 20 years of experience.

So at some point energy planning decision makers need to make some forecast of what their needs are going to be over time. A planning horizon of 20 years is reasonable. The continued operation of 20 was a good guidance. It was something that we had circulated as part of a rule making effort, guidance from the commission. But then we had shared it with the public, is that a reasonable time frame.

One obvious question that would lead from that is: are we just renewing only for 20 years, or can there be continued renewals thereafter?

Just as any equipment ages over time, there will be a time when some piece of equipment is obsolete. And it makes no economic sense to use it, or to try to operate that.

But if an applicant sought not only the renewal after gaining a 20 year renewal, another 20 years, then they still have to meet that safety standard.

Our object as a regulators to ensure that facility, with reasonable assurance can provide adequate protection to the public, protect the environment, common defense and security. So there we needed to set some time frame; we did it in the public setting so the public could

weigh in. There's no magic with 40 years, so it's no magic with 20 years. But they presented reasonable time frames for decision makers, business planners to make some reason judgements.

Then we, in looking design analysis, can use some time frame set to look at whether or not performance, whether or not support information is there, to be able to judge and understand aging effects.

So there's no magic. It was a reasonable time frame.

It's a very good question. We can go back into the history and look at the rule making and exchange of ideas during the setting up of the rule making process. We have a rule for license renewal. I don't know that we've used our acronyms but it's in the code of federal regulations. Title 10 is energy, and our seize regulations are in Title 10, and for license renewal it's part 54.

But you can go back in the history, if it's really of interest of you. You'll find out that there's no magic. But it was reasonable and it was a meaningful time frame that engineers could use in their evaluations.

MR. CAMERON: Thank you, Barry. Very helpful.

Do you have another question, sir?

MR. NORTH: I guess, you know the aging.

Everyone today would probably look at the Davis -- I don't know how to say it -- Bessie as a -- well, an aging problem that might occur in a plant.

I guess I have one quick specific question to our inspectors is, I didn't see an inspection report where that issue for the Browns Ferry Plant on the web site. Was that because it's not subject to that problem? Or I wasn't looking in the right spot?

MR. CAMERON: Before we go to see whether our residents have anything on that, can someone just give us an overview on the Davis-Bessie issue. Whether it was actually -- whether its properly characterized as aging issue and what the agency did in response to that that might have required all plants including Browns Ferry to do something and then see if -- Bob Holbrook or Bob Monk want to chime in on it?

John, do you want talk to this, please?

MR. TAPPERT: For those of you who aren't aware, Davis-Bessie is a nuclear power plant in Ohio. About two years ago it was discovered that there was a severe corrosion problem on the upper head of the vessel. That's the pressure vessel that keeps the nuclear fuel inside. Essentially what had happened was boric acid, which is used for controlling reactivity in the reactor, had caused corrosion on the head of the vessel and eaten through

several inches of low carbon steel, leaving a very small, stainless steel liner as the only pressure boundary.

So that was very, very serious event in the nuclear industry. Probably the most serious event in the last 10 years.

The agency has done a number of things to address that on a generic basis. We've issued what we call bulletins, or things that go out to the plant to require additional inspections and programs and things like that.

To my knowledge this is essentially a pressurized water reactor problem, so I don't know that specific actions were targeted at the boiling water reactors such as Browns Ferry.

Inspectors can help me out on that if they can.

But that may be why you haven't seen anything unique to Browns Ferry.

MR. CAMERON: Bob Monk, do you want to add anything on that? This is Rob Monk.

MR. MONK: As was mention this, Browns Ferry is a boiling water reactor. One of the major differences -- one it doesn't have boric acid. So you don't have the accelerated corrosion mechanism there.

Secondly, the configuration of the head doesn't have all these penetrations that a pressurized water

reactor has due to the control rod drive configuration. So it's very different design.

MR. CAMERON: Thank you.

And one more? That's fine. We're here for you tonight, anything that we can provide, we'll do so.

MR. NORTH: I know that in aging issues for airplanes and things like that there's the concept of the fleet leader or something that has been operating the longest, as being an indicator of what problems other members of the fleet will have.

I was wondering if anyone here can tell me if there are reactors of the same design as Units 1, 2 and 3 that are substantially older and could be considered a fleet leader for the purpose of aging.

In other words, are 1, 2, and 3 the oldest of their design or are they somewhere in the middle, or are they pretty much unique?

MR. CAMERON: So there's a factual question about the age of the Browns Ferry plants as compared to other plants. Then there is the issue of the concept of the fleet leader and whether we use anything similar to try to help us look at aging issues.

Did you want to respond to the one specific question, or both of them.

MR. BURZYNSKI: Yes.

MR. CAMERON: Please introduce yourself to us.

MR. BURZYNSKI: My name is Mark Burzynski and I work for TVA.

On the question of fleet leaders, there are older boiling water reactors than Browns Ferry that have gone through the license renewal process and have more operating time. And there's a design -- but they are an earlier version design. But there's also a very similar sister design at Peach Bottom that has gone through the license renewal process. So Browns Ferry is not the first of its same design. So we've had some experience at what were the important issues to look at that helped us in our review and evaluation in the information that we put in the application.

MR. CAMERON: That's great. Thank you for that.

So that the experience of some of these other plants have been folded in by varies applicants for license renewal into their subsequent applications.

John, anybody from the NRC want to say something in regard to that? John, John Tappert.

MR. TAPPERT: There are older boiling water reactors out there, as was mentioned. The vintage of this plant was kind of during the nuclear hay-day. There' s a number of reactors in the country that were built in the early mid 70's. So they have a lot of company that they

can share experience with. As far as --

MR. NORTH: None are say 10 years older?

MR. TAPPERT: The only thing that's coming to mind, I think we had some license in '69, within five years essentially. Fleet leaders, there are programs, some of the things that we were looking at the vessel heads, for instance. They're looking at who are the most suspectable plant and some of the things you look at are age, temperatures of operation. So those sort of factors are looked at when you're trying to identify who -- where do you expect to see some sort of determination, or those sort of issues of that nature emerging.

So, where? I haven't really, I don't know that we use that term so much, but that concept of course is alive.

MR. MASNIK: John, you might mention about the owners groups.

MR. TAPPERT: The owners groups have their own initiatives in the boiling water reactors. There is a vessel internals project, that addressed some cracking issues resulting from the way these things are designed. There's a structure called a shroud that surrounds the reactor core. There were some cracking issues on that.

But a number initiatives there have been taken with the owners group and with the agency to try and

address those things, too.

So that's another mechanism that's used to share information for like vintage plants and similar technologies. Do you want to add anything to that line, Mike?

MR. MASNIK: And of course, just operating experience over time.

MR. CAMERON: Great. I think that the answers to the last question probably provide some more information on the issue that you brought up, Nancy.

And while we're here, do you have any other questions that you want to ask at this point?

MS. MUSE: I won't do that to you.

MR. CAMERON: If you do have, you know anything you need to know just please ask it.

Sir, are you finished?

MR. NORTH: I guess.

MR. CAMERON: Let's hear from -- let's go to the public comment part of the meeting. Certainly we can go back to questions. We're going to hear from Mr. Chuck Wilson, who is right here. Chuck is the project manager for TVA on the Environmental Review for this license renewal application. He's going to provide you with some information that may provide some more clarity on the relationship between the TVA Environmental Review process

and what the NRC is doing.

Chuck.

MR. WILSON: I've got a few slides. I'll bring that up.

Yeah, as Chip said, I'm Chuck Wilson. I'm TVA's Project Manager for the Browns Ferry License Renewal Environmental Reviews, plural,

Next slide.

Just to refresh or go back to square one. What TVA is trying to do here is really to renew the Browns Ferry Unit operating licenses. To continue operations for 20 years past the current expiration dates.

You can see up there, the current expiration dates of the licenses if the are not renewed. And what they would be if they are renewed for another 20 years.

Next slide.

You'll be hearing some of this again, but I think it's worth hearing again.

Being a Federal agency, TVA has to comply with NEPA. In general, the more sufficient a proposed project is to TVA, the more extensive it's environmental review will be, including the degree of public involvement.

TVA completed a supplemental Environmental Impact Statement for Browns Ferry license renewal and Unit 1 recovery, in March of 2002. That's this thing right

here and it's available for anybody to look at after the meeting. It's on our web site.

Next slide.

These were the five public comment opportunities for the Browns Ferry Supplemental EIS, or part of that process. So it did get very extensive public review.

Next slide.

These are some of the environmental subjects addressed in the Browns Ferry license renewal supplemental EIS. You can see that they are fairly extensive. It involved every issue that we could reasonably contemplate.

Next slide.

For the Browns Ferry license renewal supplemental EIS, TVA concluded the following: there were no significant environmental impacts, and restarting Unit 1, and continuing operation of all three units allows power production without green house gases. Which is consistent with TVA's clean air initiatives.

Plus, it maximizes use of existing assets and avoids the impacts of new site construction, which is very important financially to the ratepayers and consumers of the valley.

Also, as a commitment that came out of the reviews, TVA is confirming the expected levels of fish impingement and entrainment associated with increased

intake flows after Unit 1 is recovered and restarted.

Next slide.

Finally, to support the NRC's NEPA review process, TVA has updated and repackaged the information contained in that supplemental EIS into an environmental report. We did following NRC guidance.

The NRC is going to use that environmental report data in compiling their own supplemental EIS. This is also available if anybody wants to inspect it, a big thick document.

That concludes my remarks, thank you.

MR. CAMERON: Thank you very much, Chuck.

Nancy, we're going to hear from you next. Do you want to come up and talk to us or do you want --

MS. MUSE: Is this a comment?

MR. CAMERON: Yeah, did you have some comments that you wanted to give us tonight?

MS. MUSE: Sure.

MR. CAMERON: Do you want to come up there or do you want to speak from here?

MS. MUSE: My comments are not down on paper, so bear with me. I'm basically concerned about the transportation of the waste and current status of the on-site storage of nuclear waste. Especially after all the terrorism activities.

Some folks, a long time ago suspected that nuclear plants and their materials would be primary targets of terrorist. I'm wondering how is that being handled now? How is this transportation issue going to be addressed in the new age that we're living in?

I'm also concerned about the workers. I don't know if this still occurs but that workers at Browns Ferry have low level radioactive waste on the clothing that they wear at the plant. I don't know how that's being handled now. I'm concerned about that.

Do they still have to throw away their boots every time they wear them or do they wear them home? That was a few years ago in the '80's that the subject that was discussed and I haven't heard that issue discussed lately.

I don't understand the terminology impingement and entrainment. I don't know how to comment on that without understanding what it is.

I'm also concerned about the level of radioactive substances that are effluent. If and what they are, and where can we get that information? Is that on the web site of the NRC? Radio activity that is released into the environment in any way.

MR. CAMERON: Nancy, has just given us a number of concerns. I think that we can address them and should address them now since we have time.

Mike, I'd like to start with the last two which seem to fall in your area. Can you just give us a simple explanation of impingement and entrainment? Then can you perhaps repeat the information on the emissions into the water.

MR. MASNIK: Sure. Mike Masnik. Impingement and entrainment are two processes that refer to impacts associated with operation of the plant at the intake structure of the plant. The plant uses large quantities of water to cool the condenser -- that pass through the condenser to cool the plant. That water is brought in from the river, in a structure called an intake structure. That water has to be fairly clean, in the sense that can't have large objects and stuff in it. So there is a series of screens in front of the intake, which screen out debris and in some cases fish.

When a fish is overwhelmed by the flow, it will actually be impinged or be pulled on to the screens of the plant. So that's called impingement.

Now when fish are very small, or shellfish, or larva or there are other small organisms, a little bit smaller than about three eights of an inch, they are too small to be impinged on the screen so they are entrained in the flow through the plant. So they actually traverse the plant cooling system. And that's called entrainment.

Those are the two processes. These are of concern because they have a significant impact on the wildlife in the water body.

Your second question had to do with, or the last question actually had to do with radioactive releases to the environment through the liquid environment. And of course the plant releases liquid that are slightly radioactive. These are -- there is a procedure when liquids are collected in the plant, they are processed through ion exchange resins. Ultimately that water has to be discarded. Of course these systems are very efficient but they do not remove every bit of radioactive material. So some radioactivity is discharged from the plant through monitored release points, into the river. There's a record of how much is released, of course those release points are inspected. And our inspectors do look at the results of that monitoring.

In addition to knowing what is released from the plant, there is also what we call a far-field monitoring program. That's a monitoring program out in the environment to verify that material is not being inadvertently released from the plant. Things like fish and shellfish are sampled in the river. From those samples, estimates are made on the dose that might be incurred by individuals that would eat fish out of the

river, or fish in the vicinity of the plant. That information is summarized annually by the licensee and submitted to the NRC in the form of a report. Which is available on our web site. You can pull those reports up. I think the next one is due in the May time frame. So the one that would available now would be for last calendar year.

MR. CAMERON: And we do have our regulations restrict how much radio activity can go out in the water.

MR. MASNIK: Right, exactly.

MR. CAMERON: Thanks, Mike.

I would just note that Nancy has stated some questions here but we know that there is an implicit comment behind them. We'll consider those comments in our evaluation.

One important issue that you mentioned, is the security issue, the terrorism threat. Maybe John, could you just tell the audience what the NRC is doing about that. I guess point out what relationship that has to license renewal.

MR. TAPPERT: It's hard to believe sometimes that it's been over two and a half years since 9-11. On that day, the world changed and certainly the way we looked at security changed. Nuclear power plants have always had very robust security programs. But in the

intervening time, they've been enhanced significantly.

The NRC as issued a number of orders to the plants to increase the number of guards, the training of the guards, putting additional vehicle bears out there to prevent any source of vehicle bombs. And a number of other things which are of a more classified nature. The agency itself has created a new office to oversee these issues. We have strong coordination with the Office of Homeland Security and the FBI. So a lot of things have been put in place to make these facilities more secure.

What you're not going to see in our Environmental Impact Statement is much or discussion or any discussion about security or terrorism. The reason for that is that we're taking care of that in what we call a operational issue. We're dealing with those issues at all 104 nuclear power plants now. We're not waiting for them to come in for license renewal to look at terrorism. So it's a very important issue, it's an issue that the agency is being very aggressive with, as well as the licensees, but you're not going to see as part of license renewal.

MR. CAMERON: Thanks, John.

The final point that Nancy was concerned about was the issue of radio active material on worker's clothing at the plant. I'm going ask Bob Holbrook or Bob.

This is Bob Holbrook.

MR. HOLBROOK: For our workers that work at the plant, the plant staff has the department of technicians that help the workers monitor their clothing, their shoes and any garments that they may have on. If a worker would happen to get contaminated on his shoes or clothing, the technicians would come with a monitor and help them verify where it is and how much it is. From that the licensee would make a decision on whether or not it can be cleaned up. Or whether of not the garments would be confiscated by the plant staff. If they are at level significant enough for the licensee to confiscate, they will take those garments and dispose of them.

Now for people that are working on a daily basis and leave to go home. Before a worker can leave the plant their monitored perhaps through more than one or two radiation monitors. The very last thing that the employee goes through before he goes home is a radiation monitor. The monitors are set at a significant low level. If the employees go through that or attempt to go through that and it sets off the monitor then the plant staff is required to come out and do an individual risk or monitor that. Workers do not go home if they go through that monitor or approach that monitor and it alarms. They’re just not allowed to go home like that. They either have

to come back in the plant and have to be cleaned up or decontaminated or the plant staff will again take their shoes and their clothes and give some other clothes that they can go home on. They don't leave the plant if they are contaminated.

MR. CAMERON: Thank you very much, Bob. I think Nancy has one quick follow up for us. Then we'll see if anybody else wants to give us comments.

MS MUSE: Where typically are these workers exposed to the radiation? Where would be some of the most radioactive sources of their contamination in the plant?

MR. CAMERON: Bob, I think you can give us an idea on that.

MR. HOLBROOK: Well I don't want to give the impression that contamination is all over the plant. Contamination is usually controlled in fluid systems. In waters and things like that. If they happen to have a leak, or during maintenance mostly, if the licensee has a technician or a mechanic go out and work on a valve in a piping system. If the valve in the line is wet with water that's contaminated and a worker has to go in there and work on it then you have to be very careful about when you touch things to keep from getting contaminated. So it's mostly in piping systems that has to has maintenance done on them.

MR. CAMERON: I would just emphasize what you said, is that those are the types of situations where there is contamination and it's not if you are just walking through the plant or something like that. There's not contamination everywhere.

Sir, did you have a comment or any for us or any questions before we rap up here?

MR. NORTH: I noticed when you were discussing the licensing for the additional 20 years. You made a distinction between active systems that are continually inspected. I think they were referred to as passive systems. I think it was your talk. Could you describe, and I assume those will be the elements that will have the additional scrutiny, what are some of those things?

MR. YEROKUN: I'll tell you I think the distinction I think you're talking about is between the active components and the passive components. The focus for license renewal is on the passive components. Active components such as that are in operation and have constant testing. Those things are -- so you know if there is a nuclear replacement or the periodic inspections that takes care of those. The passive ones like pipes and structures that are just there. Those are ones renewal focus is on. Those are the ones we call passive components. It has to be those components that are not replaced at a periodic

interval. If something is periodically replaced every three years, every five years, you know that's just PM [Preventive Maintenance]. So that's not something that we focus on either. It's those components that are there, they don't have any kind of those that are periodical replacement. Those are the ones that we have to look at and see what aging effects are there. And to worry about such that you have adequate assurance go for another 20 years. So that's the distinction.

MR. CAMERON: Thank you once again, Jimi .

We had mentioned earlier that we have varied members from the NRC staff here with us tonight. You've met some of them, and listened to some of them. We also have experts in the varies in the scientific areas that are being looked at in the environmental review, with us tonight. We're going to be here after we formally close the meeting. So if there are other questions about anything, we'll be glad to try to answer anything that we can for you, tonight. So, I think what we'll do is close off this formal part of the meeting. And I'll ask John Tappert our senior official to do this for us. Then we'll be here for any questions that anybody has.

John.

MR. TAPPERT: I'd just like to thank everyone again for coming out, taking time out of their evening to

participate in this process. Remind you that our comment period is open until May 9th, so if you have any additional comments you have this lines for the contact information for Mike to submit those. And just to reintegrate what Chip said, we will stay after the meeting if you want to discuss any other issues further.

Thanks again for coming, and drive home safely.

(Off the record 8:12 p.m.)

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