And then, like I said, we looked at the impacts from the environmental statements that had previously been written and how the environment might change from that point in time.

Do you have any other -- okay.

Ms. Cabasso: Could I? While I have the microphone, this is just an out-of-left-field question, but there's one -- on the handout for the viewgraphs, there's one sort of orphan at the end which --

Ms. Hickey: Oh, yes. Thank you for bringing that up.

Ms. Cabasso: -- and I wondered if somebody was going to talk about that.

Ms. Hickey: Yeah, I appreciate you bringing that up.

When we had our scoping meetings we talked a lot about the different options of decommissioning that are used. And I just felt like that -- even though I didn't want to go into that, I wanted to give that information and have it handy in case anybody brought up questions that related specifically to the option, SAFSTOR, DECON, or ENTOMB. And so that's -- yeah, that's an orphan. Thank you.

Ms. Cabasso: Well, I would appreciate it if you would just -- I was at the scoping meetings when those came up -- or the scoping meeting when that came up, but I'd appreciate a little review.

Ms. Hickey: Oh, okay.

Ms. Cabasso: Yes, my colleague would.

Ms. Hickey: Let's do that then.

Okay. There are three options for decommissioning that NRC has described. And one of the things I'd like to point out -- well, let me discuss them separately.

DECON is an option where the plant would shut down and immediately start the decommissioning activities and would complete decommissioning in, say, five to ten years.

SAFSTOR is an option where the plant would shut down and then wait some period of time before it completes the decontamination and decommissioning activities in order -- well, there's

a number of reasons, but it's typically to let radioactive decay occur. But there can be other issues, too.

And then ENTOMB is an option where the plant would shut down, go through some level of decontamination, and then be put in a long-term -- a stable environment, but -- and then it would have restricted access.

Now the way the decommissioning experience has gone is most plants have not -- and there's no plants currently, no power reactors currently doing ENTOMB. But most of the plants have not used just DECON or SAFSTOR.

So what we've found is that a plant may shut down and wait three to five years for either decay or some other reason, and then -- and that would be a short SAFSTOR period -- and then they'll go back and do their final decontamination and decommissioning activities.

So what we're seeing is that most plants are combining the two DECON and SAFSTOR options.

SF-C Mr. Nesbitt: Sure. I am Dale Nesbitt. I am on the Board of Western States Legal Foundation, also active with Peace Action, and a retired staff engineer from Lawrence Berkeley Laboratory.

SF-C-1 I would like to have you expand somewhat on your definition of "small," "moderate," and "large" at this moment. I know it's in Chapter 4, which I haven't read yet. Maybe it's all there. But why don't you take the opportunity to expand on that?

That to me is a very untechnical term.

Ms. Hickey: Yes. I agree. And that's why we tried to give some definition in the document.

In Chapter 1, on page 1-8, we give the Council on Environmental Quality's definitions for "small," "moderate," and "large." And this is what we based our analysis on.

"Small" pretty much means that there's no detectable, observable changes to the environment from the activity in the issue that we evaluated.

"Moderate" would mean that impacts are sufficient to alter noticeably but not destablize the attributes of the resource.

And then "large" would be that there would be a noticeable change to the resource.

I know that doesn't sound very specific, but back in Chapter 4, for every issue that we evaluated, we tried to characterize that.

I know the Socioeconomics is pretty well defined because those are areas where we look at the same sorts of issues for other environmental analyses that we've done. So if you take a look there, you may see the specific criteria that we used.
And, Mike, maybe if you could talk a little bit about the Terrestrial and the criteria, how you did your analysis for the Terrestrial Ecology.

Mr. Cameron: And Mike give us your full name and affiliation, please.

Mr. Sackschewsky: Mike Sackschewsky, PNNL.

I prepared the Terrestrial Ecology sections. In that case and for every case for each issue, we would define what we mean by "small," "medium," and "large" impacts.

In the case of Terrestrial Ecology, a small impact is one basically that you would not be able to detect any changes in the local plant, or animal populations, or community structure, or ecological functioning in the vicinity of the facility.

A moderate impact would be one that has some detectable changes in one of those factors, but not enough to drastically alter the functioning of it. You could see it, but they're still functioning normally.

And then a large impact would be one that's causing a dramatic change in the function of the plant, plant/animal populations or ecological functions.

Mr. Cameron: Dale, do you have a follow up on that or... Let me get you.

Mr. Nesbitt: Well, I understand what he said. That's helpful. I'd have to go into more detail.
SF-C-2 But it seems a bit strange to me that the majority of the things are defined as "small."

With my experience with radiation I would not think that most of them would end up being small, but that often comes down to a matter of scientific debate and opinions.

Mr. Cameron: To just follow up on that, perhaps it might be useful for people to actually get an idea of what the implications of this Generic Environmental Impact Statement are.

If you took an impact that was labeled as "generic," can you give us an example of how would a licensee who was preparing an environmental report for decommissioning, how would one of those generic impacts be considered in their environmental report?

I just want to make sure that people know what the implications of labeling an impact as generic is in terms of the decommissioning process.

Is that clear, Eva?

Ms. Hickey: Well, I guess, let me give an example that I think help defines it. And the radiological examples to me are the easiest ones.

When a plant determines their activities and how they're going to decommission the plant, they do an assessment of the dose to the workers from all the activities.

One plant in particular that we looked at determined that they could not meet the guidelines in the original GEIS, the 1988 NUREG-0586, using the methods that they were going to use. So they did a chemical decontamination of their facility in order to bring the doses down so they could be within the GEIS, within the envelope of the GEIS.

Now they didn't necessarily have to do that, but what they would have had to do is then a separate analysis in order to explain why their doses were outside of those bounds.

So I hope that kind of characterizes. If the licensee looks at an activity and they fall within the boundary in that activity, they don't have to do any additional analysis. If they are outside the boundary, outside the envelope on that particular activity, then they'll have to do a site-specific analysis.

Mr. Cameron: So that they definitely have to take a look at each particular type of impact to see whether they're within the generic bounds that this is establishing.

Ms. Hickey: Right. Right.

Mr. Sokolsky: David Sokolsky again with the Humboldt Bay Power Plant. And I don't have more information, but I have more questions.

SF-A-2 I'm a little confused because if a licensee is outside the bounds or in an area that is beyond what has been previously reviewed, we're required to submit a licensee amendment request.

Ms. Hickey: That's --

Mr. Sokolsky: Now I'm confused, since you've got, for these different criteria, a small impact, and a moderate impact, and a large impact, what is the bounds?

Ms. Hickey: Okay. If we've defined something, an activity as generic, and the significance is moderate, that's our generic assessment of it. It doesn't mean that you need to make the impact small. Is that answering your question?

What we're saying is we expect that impact to be moderate.

Mr. Sokolsky: Well, for example, with staffing and its impact on population, you give percentages that would result in either a small, a moderate, or a large impact --

Ms. Hickey: Right.

Mr. Sokolsky: -- on the area's population. So if in our situation we have a large impact or a moderate impact, do we need to submit a license amendment request? Do we need prior NRC approval on this?

Ms. Hickey: If, for that particular issue, that particular aspect of the socioeconomic issue, if it states that the impact is moderate and you're small or moderate, then it's fine. If you're large, we've determined that that's not generic.

So you need to -- yes.

Mr. Sokolsky: That makes sense, but I didn't --

Ms. Hickey: Okay.

Mr. Sokolsky: -- and I haven't read this thoroughly. Is that criteria described in here or defined in here?

Ms. Hickey: You know, I think that's a good -- okay, Mike.

Mr. Cameron: Let's get this on the record. I think that some of these questions are raising what are actually comments. And I just want to assure people that these will be treated as

comments. But I think what we're trying to do here is to figure out what's the implications of a generic finding, particularly when those generic findings might be stated in terms of "small" or "moderate."

Ms. Hickey: And one of the things that I'm really interested in comments from the public is -- we've tried to make this clear. And if we haven't presented it clearly, that's what we want to know, so we can go back and try to redefine it.

Mr. Cameron: Okay, Mike.

Mr. Sackschewsky: Mike Sackschewsky, PNNL.

In partial answer to your question, the definition of a "generic" impact also includes -- well, it has the three aspects

One, it's applicable to a number of sites.

Two, it has the same level of impact at each site. And then,

Three, after looking at it, it was determined that available mitigation measures were either technically infeasible or economically infeasible. And so therefore they're not warranted to mitigate the effects of those impacts.

So even if the impact is large, then it's determined that there's nothing that can be really done about that, and you're decommissioning the plant anyway. So that's partially what's answering your question.

And there are just a couple of issues where there are actually more then one level of impact, but that's for specific cases. And in that case you just have to determine which situation meets your case, you know, the population percentage, or whatever.

SF-D Ms. Olson: Great. My name is Patricia Olson, and I'm with TriValley CAREs in Livermore, California. We appreciate the opportunity to provide input at the hearing, but we do support holding the hearings in reactor communities in California.

SF-D-1 We're concerned that the use of the proceeding may be used to eliminate site-specific evaluation of local concerns. And our concern is the right of local residents will be preempted from raising concerns during the license termination plan review.

SF-D-2 Now I've talked earlier with people about the scope of this hearing and to what extent the

radioactive contamination levels that are permitted to be released from regulatory control for decommissioning are being used to release radioactive materials routinely.

SF-D-3 From what I understand, this is not the case. But if that were in fact true, we would oppose any release of contaminated materials during decommissioning or other times.

I think the questions about the small, moderate, and large significant levels have already been discussed. So that's all. Thank you.

Mr. Cameron: Thank you very much, Patricia.

Dale.

Mr. Nesbitt: Okay. I had not prepared anything beforehand, so this will be ad lib. Just to add to the little background, yes, I am a mechanical engineer retired from Lawrence Berkeley Laboratory, where I had a great deal of contacts with various radioactive concerns.

In addition to that, it just happens that my oldest brother, who's 15, 16 years older than I am, is retired from the Atomic Energy Commission, where he was in charge of the radioactive waste facility at Hanford.

I have another brother who spent a good share of his career designing nuclear power plants.

Now when I finished the university I was certainly one of those that was convinced -- this was back in the '50s, early '50s -- that nuclear power was the wave of the future and indeed that would produce power so cheap we wouldn't have to meter it, and all that stuff.

Well, slowly over the years, and part of it from what I've learned from my oldest brother, I've started to learn more and more about some of the bad sides of nuclear power; and over the years became concerned of course about the nuclear weapons.

But what I want to address here, and it's a question, I don't have any doubt that on a technical level the work that's represented in this is very thorough and very conscientious. I have been responsible for similar things; I know how hard it is.

SF-C-3 But I think that there is an overall concern, which I know that this doesn't address, and that is the vulnerability of nuclear power plants to various acts of terrorists. And I don't think it should be ignored, and I think that we should be very concerned about it.

SF-C-4 Now I would be -- just as background, before September 11th, I probably felt that the SAFSTOR approach was one of the best things, to let them sit for 10, 20 years, and let the radioactive level decrease significantly before you try to disperse it.

I no longer think that. And yet I just heard, well, the licensees have 60 years to decide, and they can do anything they want. And I don't think that that's a danger that the public should put up with.

And I also feel over the years, and one of my brothers also spent a great deal -- he's retired from your facility at Hanford, and he worked on the vitrification process. And so I also know quite a bit about that.

SF-C-5 But my concern here is I don't think there's any good way to treat the long-term storage of radioactive waste. I don't think Yucca Mountain is the answer, for darn sure, for various reasons.

Also at Lawrence Berkeley Lab the group that's the Earth science group has done the study on groundwater transportation. And I know from some of my associates there that they think it is not a satisfactory location for long-term storage.

SF-C-6 But now the point I want to make, that the danger to the public from a terrorist act is a function of the total level of radiation that exists on one given site. We cannot do anything about the total level of radiation in a global sense, but through government regulations we could do something about the amount of radioactive material that is stored at any one location.

And I believe that that's where the very concerted effort of the Nuclear Regulatory Commission should be in the immediate future. And I'm not so much concerned about this document as it stands, but I am concerned about the overall global effects.

Thank you.

Mr. Nesbitt: As a response to that, and whether or not it applies to this document at all, I realize
SF-C-7 it was outside of what was scoped for this particular document, I do not think it's outside of the scope of this particular document to have some regulations about the speed, let's say, of how the total amount of radiation on a given site was reduced. I think that would be perfectly within the scope of this document.

SF-B-4 Ms. Cabasso: Yeah. This is not a formal comment, but just I understand that spent fuel is dealt with in a different GEIS. And I haven't read anything except the Executive Summary of this one so far, so I am partly speaking out of ignorance.

But I think I raised this concern during the scoping. The 60-year period presumes a lot of things.

SF-B-5 And one of the things it presumes is that there's going to be a viable option for removing the spent fuel from the site. And I'm just wondering if anybody could talk a little bit about the relationship there, because I am one of many people who believe that Yucca Mountain is not a foregone conclusion, although probably that is not your view here, but there is significant opposition to it from some rather more powerful actors than us in the state of Nevada.

And, you know, I'm just wondering like what -- you know, if you can talk about that relationship, then what kinds of long-term planning is going on with the NRC in case that 60-year window doesn't work out.

Mr. Cameron: Again I guess is there something -- Mike, can you also address, I think Jackie was asking maybe some information about how this document does consider spent fuel storage, either pools or otherwise. But you heard Jackie's question to you.

Dr. Masnik: The document actually talks about long-term storage of fuel on the site. It was included in the document, even though technically it is outside the scope. And we did that because we know that there is a lot of interest in that area, obviously.

The history of this is quite interesting. When the Commission first started thinking about decommissioning, it was in the '70s. And the 1988 GEIS and the regulations that were passed in 1988 presumed at that time that spent fuel wasn't going to be a problem, and it never even addressed it.

And the presumption was there because we assumed that there would be a high-level waste repository and the high-level waste would be removed from the site actually during decommission.

Well, we all know that didn't happen. And we don't have a high-level waste repository. So what the Agency did was enact some regulations that allowed for interim storage of that spent fuel on the site.

Now the regulations allow for wet storage of the fuel in the spent fuel pool. And the Commission has come to the conclusion that that fuel can be safely stored onsite in wet storage for, I believe, 20 years additionally. Is it 30? Well, 30 years additionally. Thirty. Thirty? Okay.

Mr. Cameron: Forty plus 30.

Dr. Masnik: Yes. Additionally, the Commission enacted some regulations that allowed for dry storage of the fuel onsite. And, in fact, a number of licensees have built these dry-storage facilities, they're called ISFSIs -- it's an acronym -- but basically the fuel is placed in a canister and then placed inside of a concrete overpack and kept onsite.

It remains to be seen what will happen with Yucca Mountain. There are some other options that are being explored. There may be some interim surface storage of the fuel as well. I think you probably know about it, but it is a problem and we're wrestling with it.

Mr. Cameron: And I believe that the document does talk about the Commission's Waste Confidence Decision. And indeed if Yucca Mountain was not -- if there was no license application for it or if the license was denied, then I think the Commission would have to go back and revisit that Waste Confidence Decision.

And let's go to Steve Lewis.

Mr. Lewis: Mr. Nesbitt, let me offer an additional --

Mr. Cameron: Give us your name and --

Mr. Lewis: Steve Lewis, Office of General Counsel.

Mr. Nesbitt, let me try another sort of perspective, to try to respond to your question and maybe the questions of others, too, I think.

(Sounds of cheers from neighboring ballroom.)

Mr. Lewis: I'm sure that's not for me.

Nothing that the Commission is doing nowadays post September 11th of this year is being done in isolation. It's extremely important that we have heard your comment today.

And although it's going to fall under the framework of what we have to do with or what we decide to do with respect to this document, other people in the Agency are going to be looking at what we say in this document. And they're going to be thinking about the comments that we received on this document.

And those other people are doing a very disciplined review that Barry Zalcman referred to previously, about this top-to-bottom review of our whole regulatory regime in light of what appear to be very changed circumstances, regarding terrorist threats.

And what I would encourage you to think of is that your comment is extremely important. It's important for this document. It's also important for the Commission in general because we are embarked on a really serious and intensive attempt to try to figure out what we need to do in light of the September 11th events.

And the last thing I will say is that the direction from the Commission includes that we look at the entirety of what might need to be done, including whether or not we need to propose any legislation; whether or not we need to change our regulations in any way.

So it's conceivable that although this particular document is dealing with 5082 as it currently exists, it may well be that the kinds of comments that you have offered today and that many other people are offering to us in other forums may cause us to change our regulations in a number of respects, including possibly 5082.

Ms. Cabasso: Just a general comment which is that I want to thank the NRC and encourage the NRC to push for more openness right now with the public, as your last comment suggested, rather than less, which is what's happening with some of the other agencies.

I was on a conference call today with some people who are -- other people working on Department of Energy facilities, where we've had a real problem with a shutdown of information.

And it was pointed out that, in a number of specific cases that we can document, public input was critical in actually significantly improving public health and safety because of discrepancies that were found in documents or perspectives that were not being recognized by the agency.

So I was very encouraged by what I heard tonight here. And I just want to really encourage the NRC to fight that trend and to talk to us and solicit ideas from the public.

And maybe some of the things that we've been saying, like there shouldn't be anymore nuclear power because we don't know what to do with the waste, is becoming a more salient point now that needs to be really looked at from a fresh perspective. So thank you.

2. Transcript of the Public Meeting on December 6, 2001, in Chicago, Illinois

[Introduction, Mr. Cameron]
[Presentation by Mr. Scaletti]
[Presentation by Ms. Hickey]
[Questions answered by Mr. Masnik]
[Questions answered by Mr. Zalcman]

CH-A
CH-A-1
MS. MUSIKER: Sure. I'm Debbie Musiker with the Lake Michigan Federation. My question concerns the last comment that you just made about that no activities can be performed during decommissioning that would result in significant environmental impacts not previously reviewed. Would you determine this from the submission of the PSDAR? Is that how you would determine if anyone was going to do anything that wasn't previously reviewed?

Mr. Scaletti: Well, the licensee has to take a hard look at his decommissioning process as required by 5082. In there, he must look at the activities, look at the environmental impacts that had previously been established and reviewed and determine whether or not the activities are covered by those previously issued environmental impact statements. And we will, we go out following the submission of the PSDAR and do a fairly robust look-see at their records to determine whether or not we agree.

CH-A-2
Ms. Musiker: And then, once the work is performed, is there monitoring to make sure they're in compliance with the PSDAR? If they're actually acting, doing what they said they were going to do?

Mr. Masnik: Let me go back to your first question, too. I just, I want to make it clear that what happens is, oh, I'm sorry. Mike Masnik. Licensees in decommissioning actually take the plant apart. And our regulations require that if you make any changes to the plant, you have to do certain reviews. And one of those reviews, of course, we look at it, we require the licensees to look at any changes to the facilities from the standpoint of safety because that's a big concern. If they make a change in the plant, will it affect the safe operation in the facility?

But in that process, they look at a whole host of other activities. Will it change the fire protection program? Will it change, you know, quality assurance issues? It is one of those things that they look at every time they make a change in the plant, and what they have is a procedure.

And that procedure says, is this activity going to result in any impacts outside the bounds of these particular documents. So, the licensee does that check before the actual change to the facility is made.

We, the NRC, receive annually a list of those changes to the facility, and we do inspect that process by which they do this screening as we call it. So, just to amplify that it's done at that point, and then, as Dino said, when the PSDAR is submitted, we typically look behind the licensee's assertion that the plan that is proposed by the PSDAR will not result in any impacts outside the bounds of any previous evaluation. We actually send an inspector out and he looks at the materials that the licensee relied on to come to that conclusion.

Now, as far as any monitoring to determine whether or not in fact there was any impact, well, certainly from a radiological point of view, there's a lot of monitoring that goes on and that if they had missed the mark, you know, it would be determined or discovered by them. We don't require, for example, monitoring of aquatic systems, let's say. That's under state control. And what we have found is that typically, there are no offsite impacts associated with decommissioning that would affect, that would have a non-radiological effect, let's say, on fish or wildlife in the area.

That's one of the things that Eva will talk about actually. Does that answer your question? Okay.

CH-B
CH-B-1 Mr. Gaynor: Hi, I'm Paul Gaynor from the Environmental Law and Policy Center of the Midwest. My question is with regard to the site-specific issues. One of the site-specific issues is threatened, I'm sorry, aquatic and terrestrial ecology. And it says, the rationale, activities occurring beyond previously disturbed areas. And I'm wondering what the definition of a previously disturbed area is. Is there a time frame or how that is defined?

Ms. Hickey: By previously disturbed, we mean an area that's already been used on the site during operations. So, they've already plowed it, dug it up, built something on it, made a parking lot, had a building placed on it as opposed to an area that's still forested or a meadow. Does that clarify it?

Mr. Gaynor: So, it's at any time during the operation? So, if they –

Ms. Hickey: Right.

Mr. Gaynor: Had the initial 40-year license period and then a 20-year extension --

Ms. Hickey: Right.

Mr. Gaynor: Any previously disturbed area within that time frame?

Ms. Hickey: Right.

CH-A-3 Ms. Musiker: I have a follow up question. So, could you explain to me what that would mean for an intake for water for cooling at the facility. Would that, does anything happen to that intake position during decommissioning?

Ms. Hickey: That's a good question. I can't recall exactly, go ahead, Mike. You obviously –

Mr. Cameron: Okay, Mike. I'll bring this over to you.

Mr. Masnik: Michael Masnik, NRC. What we have found at most facilities is the intake and discharge structure, first of all, are structures that are not typically taken out of service for some time. They're usually kept in place for the majority of the decommissioning. The ultimate goal of the licensee will depend, will determine what will happen to that intake and discharge structure.

For example, typically, these plants become valuable industrial locations, and having an intake and discharge structure might be of value to some future use of the facility. And since it is a permanent structure, licensees probably would like to keep them if they can. As was mentioned earlier though, there are some States that require them to dispose of all structures on the property, in which case, the intake and discharge structure would be removed.

To answer your question, and that is that would be considered previously disturbed areas. Now, those kinds of activities, in-river activities of course are normally very closely watched by the coastguard and also by the state. So, there would be some oversight on those activities as well.

Ms. Hickey: Yes, there's another issue there. Sometimes the structures are not on the site. And that was one of the issues that we discussed in determining scope, is that we were looking at decommissioning the activities that actually occur on the site. And so, if those structures are outside of the site, then they're not considered in this document.

Mr. Cameron: Eva, you mentioned the term, you used the term envelope and I guess that gives me an opportunity to see if everybody understands how, if this GEIS were finalized the way it is, how a NRC licensee would use the document, particularly would use the generic impacts, how that envelope would apply to the analysis that they did. Can you give people an idea of how that works?

Ms. Hickey: Yes. Yes, if you're looking, when the licensee is beginning or before they conduct an activity, they would look at the GEIS and do an evaluation. And if all of their impacts for all of the environmental issues fall within our statement, what we state as our envelope, then they will not have to do a further analysis. They can conduct that activity. On the other hand, if they are outside of the bounds that we've identified in the document, and those are all expressed in detail in Chapter 4, that's where the detail is, then they would have to do a site-specific analysis.

Now, another point would be is if they perform an activity or if a new technology comes along that's not evaluated in this document, then they would have to do a site-specific analysis because it would be outside of the envelope that we've identified in the supplement.

CH-C Mr. Klebe: Well, first of all, on behalf of the Department of Nuclear Safety, first of all, my name is Michael Klebe. I'm with the Illinois Department of Nuclear Safety.

First of all, on behalf of the department, I'd like to welcome the Nuclear Regulatory Commission to Chicago and hope that your stay here is pleasant. And oh, by the way, since we're having a little bit of financial problems in the state, spend as much as you can so we can maximize the tax revenue that we can gain from you folks.

I will try to be brief, but for those of you that know me, that's not a strong suit. So, I will try to keep my remarks to five to ten minutes per comment.

Mr. Cameron: We're going to send out for coffee. All right.
Go ahead, Mike.

Mr. Klebe: All right. One thing really jumped out when I was reading this voluminous document that almost destroyed my printer. Under Chapter 4, Environmental Impacts, Section 4.3.8, and it's located on page 4-26, and that's of the version that I downloaded out of the Adams website rather than the one that you have. If you do it a chapter at a time, it works out much better. If you try to do it in the two block one, it just freezes up.

CH-C-1 The thing that really jumped up and disturbed me was about middle of the paragraph. It says, "All decommissioning activities were assumed to determine their potential for radiation exposures that may result in health effects to workers and the public.

This section considers the impacts to workers and the public during decommissioning activities performed up to the time of the termination of the license. And potential radiological impacts following license termination are not considered in this supplement. Such impacts are covered by the generic environmental impact statement in support of rulemaking on radiological criteria for license termination of NRC licensed nuclear facilities." NUREG-1496, NRC document dated 1997.

I don't think that you can remove the long-term radiological impacts of using entombment as a decommissioning method from this environmental impact. I understand that this document pretty much worries about, you know, what sort of problems are you going to have while you're tearing down the structures, while you're -- parking lots, buildings, whatever.

But if you're going to pursue entombment as a disposal option which according to your slide in the 1988 draft or '88 GEIS was assumed not to be a viable alternative, you really need to look beyond license termination into the long-term radiological impacts because that stuff is going to be there forever until it decays away.

CH-C-2 And depending upon what system structures and components you put into the containment building, that time period of potential radiological hazard may be relatively short, it could be really long. And so, I think this, the scope, the basic premise of these radiological impacts are understated.

CH-C-3 The scope is just inadequate.

CH-C-4 And the other, well, and also talking about that, if you take a look at the date of this NUREG-1496 being 1997, that was also in a time frame when entombment really wasn't being talked about. NRC held their first meeting on entombment as a viable reactor decommissioning option in December of 1999. So, I doubt that those long-term radiological impacts are assessed in this EIS, referenced in NUREG-1496.

CH-C-5 So, I don't think that anyone has answered that question as to what it is. So, what I see happening here is you're setting yourself up with entombment, whether it be entombment 1, entombment 2, entombment 3, 12, whatever, is you're not looking at the long-term radiological impacts to the residents of the state of Illinois or the residents of Connecticut or whatever state it may be.

Mr. Cameron: I'm going to make a suggestion. Before you guys jump in, we're going to let Michael finish his comments, so he can entirely set out his statement on the record -- If there are clarifications that the NRC has to offer, and I'm saying clarifications rather than debate, then I would appreciate it if you could provide that later. But let's let Michael finish.

CH-C-6 Mr. Klebe: So, in that regard, I don't think the long-term radiological impacts are being addressed and the scope of this document is inadequate as it relates to radiological impacts. And I realize that that could be site-specific or just generic, but I think in generic terms, that should be addressed. I mean, you have some general idea of entombment 1, what sort of nuclei inventory you may have or entombment 2, what sort of nuclei inventory you would have. And then you would be able to give some idea as to what are those impacts.

CH-C-7 Now, the other place where, and I admit that some of my comments are maybe not germane to this specific EIS, but they do relate to entombment as a decommissioning option. One of the things that your GEIS did not consider is termination of a license under entombment.

CH-C-8 Entombment is basically the isolation of contaminated reactor stuff from the environment. Now, if you, and that's just a rough estimate on a definition. But if you look at definitions of disposal, it's going to be pretty similar.

CH-C-9 Disposal is defined as isolating radioactive material or radioactive waste from the biosphere from the environment in a facility suitably designed. Now, the one thing that this did not, this GEIS did not consider is regulatory authority as to whether or not the NRC can license the disposal or in essence allow entombment as a reactor decommissioning option in agreement states because in agreement states, it's those states such as Illinois that has licensing authority over the disposal of low-level radioactive waste in the state.

CH-C-10 So, your GEIS does not consider the give and take between the federal government and the agreement states as to who really has the authority to say that yes, you can entomb a reactor. And from the state of Illinois' perspective, it's not you folks, it's us. Because what you are proposing in this GEIS as an allowable decommissioning option is the disposal of low-level radioactive waste.

It's not residual contamination as identified under Sub-part E of Part 20 because let's face it, if it was a residual contamination, it would be low activity, probably high volume there because of accident, and it would not be something that you would, some system structure or component that you'd be deliberately picking up and putting in a containment building and then grounding it in place or somehow, you know, preventing intrusion into it. So, in that regard, it's just a basic fundamental philosophy that you folks don't have the regulatory basis to allow that in agreement states, while you may in non-agreement states. You don't, at least from my perspective, our department's perspective, have that authority in Illinois.

CH-C-11 In addition, entombment could potentially, in the state of Illinois, create seven disposal facilities. And your GEIS does not address the potential conflict with other state or other federal statutes as it relates to authority of disposal of low-level radioactive waste. That being the federal low-level radioactive waste policy act of 1980 as amended in 1985 which specifically gave states the responsibility for providing for the disposal of low-level radioactive waste generator within their states.

And the kicker, the great benny that the federal government, the Congress gave to the states to do this is the ability to form regional compacts specifically to limit the number of radioactive waste disposal facilities in the country instead of every, you know, 15 states having one. The idea is there would be a couple. And what this GEIS is proposing to allow to happen, not necessarily requiring to happen but allowing to happen, is the potential to do bunches of these. Seven in the state of Illinois, if you look at the reactor stations that we have in the state.

CH-C-12 And I realize that this only relates to the nuclear power stations, but in previous NRC federal register notice, they specifically asked whether or not entombment should be allowed for non-reactors as well. So, I can see this really running far afield or far counter to the federal act. And I think, in terms of authority as it relates to those federal acts, you know, there's no talk here in this GEIS about consultation with regional compacts.

The Central Midwest Compact Commission, having a meeting here in Chicago on Saturday on how specifically, the specific authority to say where low-level radioactive waste generated within the state of Illinois will be disposed of. It can either allow it to be exported from the region to go to an out-of-state facility or it could require it to remain in-state. So, I see your GEIS as not addressing those issues in terms of, again, authority as to who can really say something can happen.

So, those are just the general ones on top of my head. I would refer you back to correspondence that we have sent you regarding entombment and the wisdom of it and how it relates to state's authority and to 10 CFR Part 20, license termination. We've, you know, sent you guys correspondence on this before. I don't think any of our comments have ever been addressed in those regards because we seem to keep asking the same questions.
But anyway, I would love to have a dialogue with you folks from the NRC and from PNNL and I would like to hear what sort of comments you have back. And let's start the discussion.

Ms. Musiker: Thank you. I'm Debbie Musiker with the Lake Michigan Federation. The Lake Michigan Federation is an environmental organization with offices in Illinois and Michigan. And our mission is to work to restore fish and wildlife habitat, conserve land and water and eliminate toxic pollution in the watershed of America's largest lake.

Mr. Gaynor: I'm Paul Gaynor from the Environmental Law and Policy Center for the Midwest, also known as ELPC. ELPC is a Midwest regional public interest environmental advocacy organization working among other things to achieve cleaner energy resources and implement sustainable energy strategies.

CH-A-4 Ms. Musiker: We want to make clear that we'd like to see the decommissioning of nuclear plants go forward and we want it to go forward in the safest, most environmentally sound manner. Because our 18 nuclear reactors on the United States side of the Great Lakes which represents almost 20 percent of the world's freshwater supply, we have taken a preliminary look at this document and we want to provide a voice for the lakes. As decommissioning plants go forward, we will be monitoring them and commenting on them as appropriate.

Today, we wanted, I have three points to make on behalf of both organizations and then we had
CH-A-5 several questions as well. First, we don't believe you should allow nuclear reactor owners under safe store to store waste for 60 more years after operations cease. We think the document should narrow the parameters.

Why? Because we have many concerns, some of which relate to institutional memory. In the document, it mentions that one advantage of going forward with decontaminating and decommissioning the facility right away is that you have people on the site that know about the facility. They know how it was put together. They know how it was operated and they can better advise operations for decommissioning.

CH-A-6 Second, we're concerned about the financial viability of the companies that own these sites. During a 60-year period, the companies may go bankrupt and that may leave the sites unaccounted for. We're also worried about the uncertainty associated with the cost of disposing radioactive material later. We understand that safe store is preferred because of lower costs later, but because of Yucca Mountain and other uncertainties about disposal, we're concerned about those hanging costs. Excuse me.

CH-A-7 We're also concerned about safety. With reduced staffing as mentioned in the document, there's an increased risk of accident or the threat of attack on these sites with huge environmental and human consequences.

CH-A-8 With regard to the threat of attack, I think this relates to our second point. This document was prepared after September 11th. It doesn't, thank you so much.

The document was prepared after September 11th, but it doesn't seem to respond to September 11th. We think the document should be responsive to the events of September 11th. What is NRC going to do to make sure that facilities are protected and secure during decommissioning? Has that changed in response to the threat of terror attack? We think it should.

CH-A-9 My understanding is that releases are, if there is the possibility of release during decommissioning, then that should be something that should be accounted for especially in light of concerns of attack.

CH-A-10 Finally, considering the importance of the Great Lakes to the world and to this region, we think that the impact should be addressed specifically. It is not appropriate to lump them under a generic impact analysis.

I also have a fourth issue that I have after hearing the opening talk by Dino Scaletti. The new
CH-A-11 issues that he raised as the basis for this document, the list of three, "rubblization", et cetera, to me reflect a sense that NRC is looking for ways to make it easier to finish the decommissioning process rather than thinking about ways to make it safer or more environmentally sound. And that concerns me. It seems to be driven by how we can facilitate the process, making it happen more quickly or with less cost as opposed to considering the safety issues. All of those issues relate to doing it more quickly and less costly.

Those are my comments. We do have a couple of questions to you that we wanted to put on the record. And I hope, when we have an opportunity to have a conversation, they can be
CH-A-12 answered. On page 1-6 of the document, it references that, there's literature saying that materials can be stored safely for 30 years, yet safe store can go on for 60 years. And I don't understand how you can reconcile that. There may be a way but I just don't understand it from the document. There maybe a way that you can make that more clear in the document.

CH-A-13 Second, we would like to see a place in the document where you're comparing the risks, environmental risks associated with dismantling the facility immediately versus storing the material and keep putting the facility in safe store. It's referenced in the document that there are higher risks sometimes of dismantling immediately because the material is more radioactive. But it doesn't show a comparison of the risks associated with storing it versus dismantling it in the short term.

That relates to our last question about safe store and that number, 60 years, and our question
CH-A-14 is what was the technical basis for establishing a 60-year period? And is it still appropriate?

Mr. Gaynor: And then, I just wanted to add one other question that I thought of while listening to Eva Hickey's presentation which is, I understand that in determining the generic EIS, you analyzed the variables at particular sites and this relates to a point that Deb made which is, a

CH-B-3 question I have is what consideration was given to the location of the facility as a variable in determining?

CH-B-4 I saw on PowerPoint, there was one of the, it was Other, and I don't know if the site location was included in as an Other in the variable. And I'd be interested in what kind of depth of analysis went into that if it was a variable that was considered.

CH-D Ms. Goodman: Hello, I'm Lynne Goodman. I'm responsible for decommissioning Detroit Edison's Fermi I facility. I am going to submit detailed comments. These comments here will be at the summary level. They'll give you a flavor of what kind of comments I have. And hopefully, that can at least give you an idea and provide some benefit.

CH-D-1 I'd like to start by saying I think this is a good beneficial effort to have this generic supplement. I think it's going to help do evaluations of the environmental consequences of what we're doing. It's going to make sure in some cases that we look at the right things and don't skip anything. I do agree with the overall conclusions of the document. And also, I agree on what should be considered generically and what is site-specific because there are some site-specific issues.

CH-D-2 My detailed comments, I'm going to have some comments on the details of my facility, Fermi I, ranging from the status of our decommissioning since we are inactive, the final act of decommissioning, what kind of fuel the plant used, the type of containment, some of our systems. We are cleaning up sodium residues. While that's not real different than other decommissioning activities, I'd like that stated in the report. It is one of the type of chemical activities and chemical hazards that are being done as part of decommissioning.

CH-D-4 And also, I'll talk about, I'll have comments on the site's size.

CH-D-5 So, other areas, oh, and one other item is there are some aspects of the regulations that are specific to light water reactors and I just think the document needs to reflect those rather than all reactors.

CH-D-6 For example, the specific formula for the decommissioning cost. Not that we don't have to have plant's decommissioning fund and have to look to the adequacy because the regulations do require that and we do that. But the formula doesn't apply to non-light water reactors.

CH-D-7 Okay, now, to take another area, I think there are some additional hazards that have to be addressed in the discussion of the hazards. Some of these are addressed, but I think there are additional hazards. I don't think these would affect the overall conclusions of the document. But I think there is more detail, and to some extent, some hazards that are not fully addressed in the document. And some of these are in the areas of occupational hazards.

There's a lot of decommissioning work that you have to be very careful about. In my position, industrial safety is actually the thing I spend the most time on. And it can be done safely, but most aspects of decommissioning involve an occupational safety issue.

CH-D-8 I think the document needs to address fires, chemical hazards, particulates, spills. And I'll provide more detailed comments in writing on how I think this needs to be addressed. But again, I don't think that affects any conclusions. I just think there are more issues that need to be addressed in the document.

CH-D-9 For the next comment, for older plants, in some cases, there are some differences in the physical configuration from what was described and assumed. An example is like there may not be active ventilation systems. That doesn't mean we aren't going to be monitoring our releases and filtering them as needed. We are just going to have to install those systems as needed to properly protect the air quality and so forth. But we may not have those systems still in process.

CH-D-10 Also, in the licensing arena, our documents may not include what has already been assumed to be in the documents for plants that recently shutdown. And in those cases, like for the environment hazards, if we don't have it already covered in the document, we're going to have to cover it in the license termination plan. So, I think what will be covered is just, it may not already be covered in the document.

CH-D-11 I have one very specific comment. And this is something in Appendix G that I wanted to put on the record. And I was very surprised to read of excess malignancies that have been experienced at doses of 10 REM. This is contrary to the health physics and radiological health handbook and other material that I've read over the more than 25 years I've spent in this industry. And I think that needs to be addressed and reevaluated.

CH-D-12 One last comment I want to make is that I recommend highly that in future efforts of this sort, the communications to get information about specific plants be with those specific plants or otherwise actions be taken to ensure that all plants are covered. I know in this case that some plants were not contacted, and other plants were contacted with very little time to respond. And I think you'd have a better document if you get everybody's input up front.

So, I do plan to submit detailed comments on the document. I really think it is a good effort. And I think it will help those of us that are decommissioning or during environmental reviews, ensure that what we are doing is covered or know that we need to cover it specifically.

Mr. Cameron: Okay. Thank you very much, Lynne, for those comments. Because I think we're probably, when we go to what I would call clarification in terms of some of the points that Michael raised might lead us into a wide-ranging discussion, why don't we see if we can provide information on the two questions that we had, that is, the 60 years? What's the technical basis for the 60 years? And if we need to go back to Debbie to clarify what the question is, we'll do that. And then, to Paul's question about how location was considered.

I'm assuming that the NRC was taking note of those questions. Can we have someone who can address the basis for the 60 years? Michael, all right.

Mr. Masnik: I can honestly say that I can't, and I don't think there is a really good explanation of how the agency arrived at 60 years. As we were talking for a few minutes before the meeting, I have heard, and I don't know if this is really the way it happened. They assumed that cesium had a half life of 40 years, and they figured a half life and a half would be a significant reduction in the facility and would make a significant difference in the occupational exposure as you dismantled it. But, you know, I've looked into this before and I really can't find a good explanation. None of the other NRC personnel here have an opinion on this.

There was one other question that you had, one other issue raised and that was on the bankruptcies. I don't know how familiar you are with our regulations, but we do have a requirement that the money be collected and placed in a secured trust. And that money is basically unreachable by the licensee. There are very strict limits as to when, for example, the licensee can access that money.

We've had a number of license transfers where the ownership of the plant has changed. That, it's been pretty clear that that fund transfers with the facility and that the losing entity no longer has any claim over that money. Yes?

Mr. Cameron: And if you could just give us your name again for the transcript?

Ms. Musiker: Sure. Sure. Debbie Musiker, Lake Michigan Federation. That makes sense to me if a facility has a full life or the expected life. But what happens to a facility that shuts down prematurely and they haven't actually collected sufficient funds for what's necessary for decommissioning and then, they go bankrupt? And that situation still poses a risk.

CH-A-15

Mr. Masnik: That is a very good question. The requirement to put aside money for decommissioning trust fund was part of regulations that were put into place in 1988. Very shortly after that, we had a series of plants that shutdown that had essentially insufficient money in their decommissioning trust fund. And it was a significant concern to the Commission.

What has happened is, in some cases, the licensee has placed, we believe, we don't know for certain, but we believe that the licensee had chosen safe store for several years or a number of years to accumulate funds in their trust fund. Fortunately, the PUC's, the state PUC's allow the collection of that money, and as a result, those funds have solidly been built up even in the plants that have permanently ceased operation shortly after 1988.

You know, as we enter the second millennium now, we've had roughly 13 years. Those funds of the remaining plants that are still operating now are, I wouldn't say fully funded, but significantly funded. And it appears that they will be funded to a level where we won't have to worry about whether or not there is sufficient money.

You know, if the money is not available, there are other remedies. We discussed this back when Three Mile Island had an accident. And ultimately, the responsibility falls on the federal government although we've never had to exercise that, so, at least not in power reactors.

Mr. Cameron: And Mike, do you want to try to answer Paul's question about location or should we turn to someone else on that? And do we need Paul to address that again, to just repeat what his question is?

Ms. Hickey: Okay. I think the question was did we use the location of the plants as one of the variables. And in fact, we did do that. We looked at location from the perspective of does it sit on a lake, on an ocean, and also from a perspective of population. So, we did in fact include location, and I guess the variabilities that location would have on the decommissioning activities. Is that adequate? Okay.

Ms. Hickey: Yes. I want to make one clarification point on one of your initial comments on entombment. And if you look at what we say is in scope in the document, we are only looking at activities that lead to termination of a license for unrestricted use. And entombment would not end up there. You would have a restricted use when you get to the point of license termination.

So, what we did is we evaluated the impacts for preparing a facility for entombment. And in fact, a site-specific analysis would need to be done at the time of license termination for entombment. So, I'd like to just make that as a clarification. I know you had a number of other issues.

Mr. Cameron: And Michael, do you want to either give us an additional comment or find out what exactly Eva meant by that?

Mr. Klebe: Mike Klebe, IDNS. I have no problem just starting up this dialogue because what you just said really perplexes the bejeebers out of me. And I'm not, for the court report, I'm not
CH-C-14 quite certain how you spell bejeebers. So, what you're saying is you're going to set something in motion, i.e., entombment in motion, you're going to allow a nuclear plant operator to take all the contaminated system structures and components, put them in a containment building as part of this GEIS and you're not concerned at what's going to happen at license termination? Because that's in essence what you just said.

Mr. Masnik: Let me back up a little bit. First of all, the 1988 GEIS didn't come to the conclusion that entombment was probably not a viable option at that time. Since that time, since 1988, there has been some interest on the part of industry and there's been some interest on the part of the staff to explore the possibility of entombment. The staff was directed by the Commission to take a look at this.

There is an additional parallel effort within the agency, and I know you're, I'm sure you're familiar with the fact that we just put out an advanced notice of proposed rulemaking on entombment, which is inviting the public to assist the staff in coming up with a possible regulation that addresses this. Now, to be honest with you, we were put in a position of looking at environmental impacts on an activity in which the Commission has really not decided what direction to go, that it should go in.

And what we decided to do was look at the environmental impacts associated with the activities related to preparing the facility for entombment, knowing full well that there would likely be future rule making that dealt with the issue of entombment and the issues of, the other issues that you raised during your presentation. So, I think what Eva was trying to say was that restricted release, which is allowed by 10 CFR Part 20 Appendix E, would require a site-specific analysis. And therefore, it could not be considered generically by this document. And therefore, we're not evaluating it. Okay.

Now, the rule making that would potentially allow for some sort of entombment would also require some environmental assessment and could likely result in an environmental impact statement that would deal with the issues that you raised, the long-term effects and the issue of whether or not the states would be involved in the process, which I assume they would be but I'm not sure how that would occur.

Mr. Klebe: Okay. Mike Klebe, IDNS. Just so I understand, so you've got, you just said that because this is going to lead to a restricted use license or release under restricted use limitations –

Mr. Masnik: Let me, we, the staff, made the assumption that it would be restricted release. You have to understand we're --

CH-C-15 Mr. Klebe: Okay. That's fine. That's fine. And you said that for that restricted release use is going to need analysis on a site by site basis. Then why are you dealing with entombment in a generic EIS? Because just by your statements, entombment is not a generic activity. It is a completely site-specific activity. Maybe I'm just not seeing the picture right but –

Mr. Cameron: Let's try to answer that.

Mr. Masnik: Again, a very good question. The way the regulations are set up, when a plant shuts down, they can begin to decommission the facility. They can do that without any specific authority by the NRC. In other words, we don't have to grant them approval to begin to dismantle the plant.

The licensee essentially can perform the majority of the decommissioning without any formal environmental review and approval which would involve an environmental assessment. Towards the end of the decommissioning, when you get close to the end of decommissioning, the licensee has to submit a license termination plan. And that license termination plan is an amendment to the license and it contains the requirement to do an environmental assessment at that point.

However, from the period of time that they permanently cease operation until the license termination plan which would be typically a couple of years before they plan to terminate the license, and that could be a seven to ten to 50-year period, there is no environmental assessment required. So, what this generic environment impact statement does, if the licensee so chooses to entomb and if the NRC has regulations in place that would allow for the entombment, it covers the period of time that the plant permanently ceases operation until the site-specific analysis is done under the license termination phase.

CH-C-16 Mr. Klebe: Mike Klebe, IDNS. Doesn't that set the utility up for a great risk exposure to go down the path of entombment and find out that 40, 50 years, whatever time frame they elect when they try to terminate their license of someone saying, no, you can't do that? I mean, because of the radiological impacts?

CH-A-16 Ms. Musiker: Because you said, Debbie Musiker, Lake Michigan Federation. You said that a licensee could go ahead and dismantle without formal approval and I thought that the licensee based on the document, the licensee had to submit the PSDAR and then there was a 30-day public process. Were you not counting that because that didn't directly relate to the question?

Mr. Cameron: And I think you were just doing some shorthand there. And besides the PSDAR, you may want to revisit the statement that Dino had on the slides about there are certain things that they have to be within a framework. Okay, if you could just give us a summary of that, Mike?

Mr. Masnik: Yes. The regulations, I'll give the summary first and then I'll answer your question on PSDAR. The regulations are very specific and they say that you cannot perform any

activities outside the scope of any previously issued environmental assessments. And that forces the licensee, as I mentioned earlier, to do this review each time they make a change to the plan.

However, the 1996 change to the regulations established the post-PSDAR as the vehicle for telling the NRC and the public what they planned to do with the facility. There is a requirement to submit a document. This document is typically 15 to 20 pages long. It talks about schedule. It talks about what they plan to do. There's some discussion on funding and there is some discussion on environmental impacts.

But that document is submitted to the NRC and it is not submitted as a licensing action. We do not review and approve it. It's given to us, and 90 days after the NRC receives that document, they then can begin major decommissioning activities, major decommissioning dismantlement activities. But there is no review and approval of that document.

One other thing I might mention, there is a license, there are things called tech specs. And periodically, during decommissioning, the licensee will change that license. Those changes to the license require licensing documents to be submitted to the NRC and it's a license amendment. And that procedure allows for an opportunity for hearing and it also requires the staff to do an assessment.

But it's only on that particular change to the license. There's no overall assessment of the plan to decommission or how they plan to decommission the plant.

Ms. Goodman: Lynne Goodman. I just have one additional request, I'll put it. Within the last
CH-D-13 short period, there's a number of decommissioning related documents that have come out for review. And while I appreciate the NRC has been very busy, in addition to this GEIS supplement, the entombment proposed rule making, there's also I think, I got two documents this week regarding decommissioning cost reports and I think the cost estimate formats.

If there is any way that we could not have to get all the comments in the very short comment period, if it could be extended, I'd really appreciate it because it's going to be a very busy December for me.

3. Transcript of the Public Meeting on December 10, 2001, in Boston, Massachusetts

[Introduction, Mr. Cameron]
[Presentation by Mr. Scaletti]
[Presentation by Ms. Hickey]
[Questions answered by Mr. Masnik]

BO-A Mr. Dierker: Sure. Carl Dierker with the EPA in Boston.

I had a couple of questions on Eva's presentation.

BO-A-1 If the life cycle of the plants has the decommissioning activities out as far as 60 years, what's the scenario that might involve?

Is that a scenario such as Millstone, where you've got this facility in SAFSTOR, while the other facilities are up and running?

Or is there actually a facility that would be not running, nothing's going on at the facility, and there's no decommissioning going on for 60 years?

That seems awfully long.

Ms. Hickey: The regulations require that the decommissioning be completed within 60 years.

So, there could be a SAFSTOR period in there, and then, the final decommissioning would actually have to take place within that 60 years.

But, yeah. There's a number of plants that are shut down and that have associated operating plants with them. And they are waiting until the other units shut down before they go through their decommissioning.

BO-A-2 Mr. Dierker: But, at least, in your experience, have you seen facilities -- You haven't seen facilities where the only facility that's been operating has been shut down, and then they're just sitting there waiting.

Ms. Hickey: Yeah. There's -- There's a number of them that are just in SAFSTOR. Zion, which has just recently shut down is in SAFSTOR.

LaCrosse is in SAFSTOR.

And then, there's a number of facilities that have been shut down. And most of -- There are several that are now going through decon, so they haven't stayed in SAFSTOR up to the 60 years.
But, Rancho Seco and San Onofre were both in SAFSTOR for a period.

BO-A-3 Mr. Dierker: And just -- It seems like it's taking a substantial land mass out of sort of useful life for a long period of time.

Ms. Hickey: Right. And this is–

Mr. Dierker: For someone's generation -- Really a generation of life.

So, that's my only question.

Ms. Hickey: Yeah. There's a discussion in here on -- on some of the benefits and disadvantages of using SAFSTOR or decon.

And one of the disadvantages of SAFSTOR is, yes, that land is in -- not available for other uses.

Mr. Dierker: That makes sense in the Millstone situation, obviously.

BO-A-4 You said you had visited a number of facilities. I wondered if you'd visited any in New England, in particular, the Maine Yankee facility?

Ms. Hickey: Yes. We went to Maine Yankee. That was--

Mr. Dierker: So, you talked with some of the folks up there and got a sense of what was -- what were the issues and so on?

Ms. Hickey: Right.

Mr. Dierker: Okay. That's good.

Ms. Hickey: And we list the plants in the supplement that we visited. There is a listing there.

Mr. Dierker: Great.

Now, on the findings on impacts -- issues and impacts, you have, next to the -- the impacts that
BO-A-6 you expect from these facilities, these aren't -- As I understand your slides, they're not saying

that all -- that all sites, the water -- the water use and quality and air quality and ecology are small. You're just saying the sites -- those issues that are dealt with in the generic sense are small issues.

And then, there can be site specific issues that could be small, medium or large?

Ms. Hickey: If -- Right. If they -- If they fall within the bounds of a small -- If it's generic and we say it's small, and they fall within the criteria of that, then they can be considered generic and they don't have to do any other analysis.

Mr. Dierker: Got ya. That's all the questions I have. Thanks.

BO-B Mr. Williams: Thank you. Carl Williams, I'm from Maine Yankee.

I've got a question in scope.

Clearly, NRC scoped evaluating environmental impacts associated with the radiological aspects of decommissioning.

BO-B-1 And yet, I note in the document that you also include decommissioning -- environmental impacts of decommissioning a non radioactive system such as cooling towers and discharge pipes.

I'd like to understand what criteria NRC will use to determine the acceptability of a licensee's plans in those areas.

Ms. Hickey: Okay. Let me explain. When we looked at those systems, what we did is, we said, if -- if a system was not radiologically contaminated, but was required for reactor operation, then we included those within the scope of our document in -- in assessing environmental impacts.

So, that's -- that's why you'll see some of those -- some of those systems and buildings and what not that would not -- that are not contaminated.

And so, I guess -- I think, then your question is, if NRC -- if there were impacts beyond what we described in our GEIS for those non contaminated or uncontaminated buildings or systems, what would NRC's -- what would they do if they -- if you weren't within the envelope, I guess.

Because, if you're within the envelope that we've defined, then it wouldn't be an issue.

That's a good question, I think, I will--

Mr. Cameron: Tom, do you -- Maybe you want to just elaborate a little bit on the implications of what you're talking about, and then, we can go to someone else to perhaps give us some more information?

Mr. Williams: Clearly, a decommissioning involves a lot of agencies. It involves EPA. Maine Yankee's going through a very large closure process.

It involves historic preservation commissions, Atlantic Salmon Commission. It involves everyone that you can possibly imagine that has a stake in environmental issues.

BO-B-2 The NRC scope is clearly associated with the radiological aspects of decommissioning.

So, an issue such as rubblization, that has a radiological component, this seems clearly it's within the scope of NRC's review regulation.

I do not see the removal of a cooling tower is within NRC's scope.

Mr. Cameron: Let's find out what the rationale was for including that within the scope. Mike?

Mr. Masnik: Mike Masnik, NRC.

We started this project almost three years ago. And for the first two years, this was an issue that we argued a lot, as to where do we draw the line.

Clearly, the regulations say that decommissioning involves the radiological decommissioning or decontamination of the facility.

But, to be honest with you, there was a lot of -- a lot of interest on the part of the public and other federal agencies to go beyond just those systems that are radiologically contaminated.

You know, where do you draw the line? And that's a good question.

We chose to draw the line at -- at those systems necessary for the safe operation of the facility.

But, for example, the training facility, or an administrative facility that's on the site, would -- would -- we decided would be outside the bounds of this analysis.

When a plant is licensed, non radiological issues are -- are evaluated. And it seemed reasonable that at this -- at this point, that those particular impacts also be evaluated.

That's -- That's how we got to that -- that decision.

Now, we have made some predictions on things like noise and -- and dust. And -- And we established an envelope.

Mr. Dierker: Good evening. My name is Carl Dierker. I'm regional counsel at the Boston office of EPA, or New England office of EPA.

I've a brief statement to read today.

I would like to start by thanking the Nuclear Regulatory Commission for coming to New England, a region that is in the forefront of commercial nuclear power plant decommissioning, to give interested stakeholders here an opportunity to comment in person on its Draft Supplement 1 to the generic environmental impact statement on decommissioning in nuclear facilities.

As an aside, I'm a little disappointed we don't have a better turn out for you all here. We certainly have a lot of people interested in this issue.

And I'm disappointed we haven't had more people.

As you know, four nuclear power plants presently are in various stages of decommissioning and dismantling. Maine Yankee, Connecticut Yankee, Yankee Rowe in Massachusetts and Millstone Unit 1 in Connecticut.

EPA New England has been following the decommissioning process at each of these facilities closely in order to ensure that the cleanups at these four sites are comprehensive and integrated to the maximum extent possible in order to leave these sites available for safe -- for safe reuse far into the future.

Congress has given EPA an independent role in reviewing other federal agencies' compliance with the National Environmental Policy Act. And we at EPA's New England Regional Office take this role seriously.

EPA has four primary responsibilities with regard to NEPA. One, providing advice to federal agencies that are developing NEPA documents. Two, advocating for early and substantive opportunities for public involvement in the development of these documents.

Three, evaluating the adequacy of federal agencies' environmental reviews which are the basis of these NEPA documents.

And four, recommending whether projects undergoing environmental review should be modified or mitigated based on projected environmental impacts.

Where EPA finds that a proposed action is unsatisfactory from the standpoint of public health or welfare or environmental quality, the Environmental Protection Agency administrator has the responsibility to refer the matter to the President's Council on Environmental Quality for resolution.

EPA, and a variety of stakeholders agree with the NRC that the GEIS for decommissioning that was published in 1988 needs to be revised and updated.

That was one of our -- one of the primary concerns we raised when we first got involved in the NRC decommissioning process in New England back in January of 1999.

EPA applauds NRC's initiative in preparing Draft Supplement Number 1 and issuing it for public comment.

Moreover, we generally support the approach NRC has taken in this draft document of analyzing environmental impacts and determining which can be reviewed generically for all decommissioned facilities, and which require site specific review.

In conjunction with EPA headquarters in Washington, we are currently reviewing the draft supplement and we'll be providing specific comments on NRC analysis and suggesting where additional discussion or clarification may be needed.

EPA looks forward to working with NRC as it continues to develop this important document.

We believe that early and thorough public participation is critical to reaching the best solution in environmentally complex issues. Solutions that will have credibility with and maintain support from the affected communities.

This meeting, and the opportunity for public -- for the public to submit written comments on the draft supplement by December 31st, are significant parts of the public outreach and participation process that should be ongoing at every decommissioning facility.

Thank you again for coming to New England and providing a forum for comments for our citizens, who will be extensively involved and affected by the decommissioning process in the months and years ahead.

Thank you.

4. Transcript of the Public Meeting on December 12, 2001, in Atlanta, Georgia

[Introduction, Mr. Cameron]
[Presentation by Mr. Scaletti]
[Presentation by Ms. Hickey]
[Questions answered by Mr. Masnik]
[Questions answered by Mr. Zalcman]
[Questions answered by Mr. Lewis]
[Questions answered by Mr. Neitzel]

AT-E Mr. Genoa: Thank you. Paul Genoa with the Nuclear Energy Institute.

At one point, Dino, you mentioned that the scope was to include three new areas. You mentioned rubblization, entombment and partial site release. The entombment is clearly identified as a section in the report. Could you direct us towards the part of the report that would deal with rubblization or partial site release?

Mr. Scaletti: Rubblization in general is considered from the standpoint of disposing of clean material on site and the leachability of that material, et cetera and that's covered in every section of the report.

Mr. Cameron: Mike, do you want to offer something on this?

Mr. Masnik: I can give you a page number for the first one, and that's rubblization.

Name is Mike Masnik.

On page 1-7, lines 20 through 33, it talks about rubblization.

Mr. Masnik: Mike Masnik again.

For partial site release, the Commission just recently issued a draft rule for comment on the proposal to release portions of the site prior to approval of the license termination plan. That's out for comment at this time.

Additionally, recently the Commission also issued an advance notice of proposed rulemaking for entombment and that also is a solicitation for public comment.

Mr. Scaletti: Partial site release is talked about on 2-7.

Ms. Zeller: I'm Janet Zeller, Blue Ridge Environmental Defense League. I'd like to know what issues or areas of concern or specific information the NRC would evaluate in determining additional rulemakings, whether they are needed.

Mr. Scaletti: Well, this document -- right now, the one rulemaking activity we have going on is -- the notice of advance rulemaking is entombment.

Ms. Zeller: Right.

Mr. Scaletti: Now we did evaluate a range of entombment options at both ends of the spectrum. And there's information in there that could be used for the entombment rulemaking. I expect there'll be a lot more done but certainly this would go to support it if it was necessary.

Ms. Zeller: Okay, and are there other possible areas of new information that could be presented in this process by the industry or the public that would result in additional rulemakings, other than those now underway?

Mr. Scaletti: I'm not sure. Would you like to address that, Barry?

Mr. Zalcman: Good evening. My name is Barry Zalcman, I'm also with the Office of Nuclear Reactor Regulation.

I try and characterize our regulations as always being interim regulations in that we try to perfect them all the time. There are experiences that we get through plants and operation as plants go into decommissioning and events that occur and obviously the events of September 11 have a bearing on this as well.

So the agency is always receptive to interest on the part of the public in the way we should shape our rules. There's a mechanism allowing the public to participate that way. But let me at least provide you some insight that certainly in the case of security, the Commission has already directed the staff to do a top down review of security issues, not only in plants that have been permanently shut down but also for operating nuclear power plants as well.

So that's a fertile area, it's likely to be changed in the years to come. The agency has taken additional actions as well in the interim, but certainly we're talking about entombment, there's an initiative underway of the partial site release rule. You can expect that there would be changes in the security arena as well. The key is we can't forecast where all those changes are going to be, but we have an organic set of regulations in that we attempt to improve them as we have more and more experience, engaging the stakeholders, and that's the public and the industry and licensees, throughout that process.

AT-A Ms. Barczak: Sara Barczak with Georgians for Clean Energy.

AT-A-1 I had a question on the difference between the 1988 -- or one of the differences between the 1988 version and this supplement. The scope of facilities that are being addressed is much smaller, it's mainly just nuclear power reactors and I wanted to know for all the other facilities that were referenced in the '88 document and some of those included like the MOX facilities. How will those be addressed, are they going to be addressed in a different type of document down the road or -- I'm just asking along those lines.

Mr. Scaletti: The 1988 EIS is still intact with the exception of nuclear power plants, all of the information in there is still valid. We have excerpted all of the information and we have repeated it if necessary so that the supplement is a standalone supplement.

As far as the timing and the necessity to revise the other portions of NUREG-0586, if someone else can address that, certainly not me.

AT-B Ms. Zeller: Okay. Janet Zeller, Blue Ridge Environmental Defense League.

AT-B-1 Okay, we searched the document to determine what the actual acceptable risk is to the public for the activities addressed in your process. And what we determined is that it's a pretty wide range, from three to 21 person rems.

AT-B-2 Can you explain what the differences are between the actual impacts on a population of say 10,000 for the two options of non-restricted use and restricted use at the end of the decommissioning?

Ms. Hickey: Well, let me see if I can repeat it back so I make sure I understand. You're looking at the variability that we've shown in the dose to the public from the decommissioning activities and so your question is what -- why is there that variability? And then you had a question related to restricted release and unrestricted release.

Ms. Zeller: Okay, yeah. What is the absolute level of acceptable risk -- and I know it ranges in the experiences that the NRC has had at different decommissioned power plants. And so there were different doses identified at different plant locations and I know some of the variables that went into that.

What is the absolute level of acceptable risk that NRC will allow for decommissioning activity in general -- that's number one. And number two is what are the two levels of acceptable risk for the two options of leaving the site -- leaving the site really clean, which is unrestricted use, or leaving the site restricted.

Ms. Hickey: Okay, I think I understand.

The first question is related to the actual time when decommissioning is occurring, and what we did, we looked at the collective dose to the public during the time of decommissioning and we found -- what we did is we compared it with the dose to the public during operation. And we found that for the most part, that dose was lower than during operation. There may be some activities, some times when the releases would be similar to operation, but the plant must meet the regulations for release of effluents the same as an operating plant. And so that's why we compared it to those of the operating plant.

Now, the second question is related to actual license termination and our document only looked at -- we only considered in scope license termination for unrestricted release. If the licensee goes in for a restricted release, then that would require a site-specific evaluation.

For an unrestricted release, the criteria is 25 millirem per year. So for the --

(Inaudible question from Ms. Zeller.)

AT-B-3 Mr. Cameron: The question was 25 millirems where?

Ms. Hickey: Okay. Maybe the best way to do that is to read what it actually says in the requirements and then I can try to explain it, if I need to.

"Unrestricted use means that there are no NRC-imposed restrictions on how the site may be used. The licensee is free to continue to dismantle any" -- okay, let me go down to this --

"The Commission has established a 25 milliservert (ph) per year, which is 25 millirem per year total effective dose equivalent to an average member of the critical group as an acceptable criterion for release of any site for unrestricted use."

And I won't describe exactly what the critical group is, but that's described in here. So that means in one year there is a group, an individual that would be outside of that reactor site and they would have to receive less than 25 millirem per year. That's total effective dose equivalent. So for the entire year, on site -- I'm sorry, on site -- so for the entire year, somebody located on site could not receive more than 25 millirem per year.

AT-B-4 Ms. Zeller: Okay, so who's responsible then for a site that has restricted use? Because I couldn't quite tell. Who would actually protect the public?

Ms. Hickey: -- if I can just tell you that those descriptions are on page 2-5 and 2-6 of the supplement and that's directly out of the regulation, 10 CFR Part 20.

Steve.

Mr. Lewis: Steve Lewis, Office of General Counsel at the NRC.

The major comment I wanted to offer was that the question of who will be responsible for a restricted release, which I think was the most recent question you posed as a question, the answer to which you are not going to find in this document. This document didn't address it. It's really NUREG-1496, a 1997 document, which was the basis for the license termination rule that addresses those types of issues.

As far as the particular numerical requirements that go along with restricted release, I think they are as set forth. Eva pointed to you where in the document those are specifically laid out.

AT-C Mr. Martin: My name is Ed Martin, I'm a lawyer in Atlanta. I have represented or worked with people concerned about facilities for most of the past 30 years, off and on for the past 30 years. And I'm always concerned in these processes about where the public ends up.

The very first question I ever had about NRC operations was in the licensing of the Vogtle Nuclear Plant when the public comment -- or public hearing was scheduled, and of course, that plant is near Augusta, Georgia, the nearest major city. The public hearing was scheduled in Atlanta on the weekend of the Masters golf tournament. We had to get Senator Talmadge's
AT-C-1 office to move that back. And I think my concern is always to what extent a generic statement like this takes particular issues that are local out of the local decision-making process, out of the public hearing that has to be had for -- or we were originally led to believe has to be had for each of these.

AT-C-4 A lot of my work has been based on concern about the cost of these facilities relative to the amount of electricity or other benefits they provide on a life cycle basis, and that seems to be something that's a subtext of this statement.

AT-C-2 I think going back 25-30 years, the notion was well, we're going to build these things, we're going to run them and then we're going to cover them up in concrete and post guards around them and they'll be safe. Well, now we have rubblization. Suddenly entombment was the floor, now it's become the ceiling, we won't see it because it's too expensive. Money moves too fast and, you know, how can we do it cheap, how can we do it quick.

And of course, our concern is, you know, it may be quick and cheap for the licensee, but for people in the immediate area, people downstream, people on the Savannah River, on the Altamaha River, my concern is that they not be unduly saddled with costs that should be taken into account and that those local concerns be maintained in this process.

AT-C-5 Let me just see, I had -- I think the one other question I had was as I recall when the first statement was issued, there was a discrepancy between the NRC radiation exposure floor, threshold level, and the EPA level. Is that still out there? I think yours is 25, theirs is 4 to 15 or something for the same exposure.

Mr. Cameron: Do you have anything else that you want to add before we sort of just close on your formal comment and then we'll see if we can answer that question?

AT-C-6 Mr. Martin: Okay. Yeah, that was just a question I had. No, I think my main issue is just, you know, having the costs on the table and having the costs be understood, because I think for me there's a moment I go back to in the late 1970s in a proceeding before the Georgia Public Service Commission around the Georgia Power rate hike and this is prior to the Vogtle plant or anything else coming on line.

The power company presented a decommissioning report by the Bechtel Corporation, which was a consultant of theirs, that estimated that the cost to decommission a plant was going to be $270 billion in then current dollars. And of course, that was, you know, 30 years, 50 years down the road. So we're talking about dollars that are worth less than dollars in 1978 or whenever that was. And my number was always -- my benchmark number was always that the supply of money in circulation in the United States at that time was $360 billion.

And I think there's got to be some explicit discussion of those sorts of economic issues, and it
AT-C-3 seems like they're not really out there. You know, I think if people thought we're going to be rubblized and have a waste dump out there, they might not have been so welcoming to these facilities.

Thank you.

Mr. Masnik: Yes. It has been a controversy for a number of years now. The EPA has proposed 15 millirem per year and we've proposed 25 -- actually not proposed, but our regulations state 25. We're still working with EPA to try to resolve the differences. We've had a number of facilities that have agreed to clean up to a lower standard and in fact, what we find is that for those plants that are nearing the end of the clean up, they're not really near any of those numbers, they're much lower than even the EPA numbers.

So hopefully in the not too distant future, we'll resolve the disagreement between the two agencies, but meanwhile, the industry is working towards a number that's actually below that.

Can I just quickly address one or two other comments that he had? Or do you want --

Mr. Cameron: Well, since Ed does have to leave, I think the one comment that everybody would probably like to -- I mean Ed's comment was basically how does the locality, how does the community around the facility participate in decommissioning, how do such questions as cost get considered. I don't want to go into a big long thing now, but Mike, if you could just talk about how that happens and just reiterate the fact that this Generic Environmental Impact Statement, although it is important, is only just one piece of the decommissioning process.

Mike.

Mr. Masnik: Our Regulations 50.75 require licensees to put a certain amount of money aside. That trust fund that the money is put into. Licensees are required, on an every two year basis, to notify the NRC the status of that trust fund.

At the time the plant permanently ceases operation, the licensee has two years to prepare a PSDAR, post-shutdown decommissioning activities report, and that requires a certain amount of information. It provides for notification to the public and the NRC of what the licensee plans to do with the decommissioning. It provides a schedule. It also requires a licensee to take a hard look at costs and also environmental impact. So that's another period of time.

Now when a plant ceases operation, what we have done in the past, about two or three months after the plant permanently ceases operation, we do have a public meeting in the area to kind of tell the public what the process is. At the time that the PSDAR is submitted, typically two years after shutdown, we also have another public meeting where we discuss this.

There is a requirement -- in fact, we're just recently publishing or have published some new regulatory guides on cost estimates and what kind of cost data the licensee has to submit to the NRC. So if you're interested, we could get you those. But that would give you some more detailed information on cost.

Your number of $270 billion mystifies me. I think you might have been off by a factor of 1000 on that. What we're finding is the numbers can vary anywhere from $250 to $400 million but we have to be very careful when we talk about cost because we're only concerned about radiological decommissioning costs, okay, what it costs to clean up the radiological hazard.

Very often, licensees lump fuel management costs in there, they lump costs associated with regulations required by the local community or the state. Green field costs to return the site to its pristine condition can add significant amounts of money to that.

So whenever anybody gives you a cost number, be sure you ask what exactly does that entail. But like I said, about $250 to $400 million, and it looks like most of the licensees are going to be, you know, within that range. And I think we even discuss that some in the document as well.

Ms. Barczak: I don't have a Power Point presentation. Can you hear me with this, because I didn't think it was amplifying before. Is this better? Okay.

My name is Sara Barczak and I'm the Safe Energy Director for Georgians for Clean Energy in our Savannah field office. We also have an office here in Atlanta. Georgians for Clean Energy is a non-profit conservation and energy consumer organization. We are statewide with members throughout Georgia and have focused on energy and nuclear concerns for about 18 years.

AT-A-2 I would like to start out by addressing the process and how it limits the ability for the public to effectively participate in this and other nuclear-related issues that impact Georgia communities. The technical nature of the issues and an ongoing resistance by nuclear regulators to share accurate information about nuclear threats has always made it difficult for the public to be involved in decision-making involving nuclear energy issues.

AT-A-3 But after the tragic events of September 11, this problem has escalated to a point where our organization believes it is highly irresponsible of our federal government to go forward with making crucial decisions that will affect generations and generations to come. The NRC's website, as many of you know, was not available for a time and is currently severely scaled back, making public access to important background information very difficult or impossible.

I have spoken with representatives of the U.S. Nuclear Regulatory Commission and they have echoed some of my concerns as they too have difficulty gaining information on nuclear industry activity. If people like myself who have the ability to research these issues on a full time basis along with staff members of the regulatory agencies are having a hard time, imagine the fate of a concerned citizen who has limited time to devote.

And I think all of us in this room know what I'm talking about, and it's a very real concern, it's very valid. And regardless of how much I try to get fishermen to use the ADAMS website down on the Altamaha, they are not going to do it. So this is a real, real problem that we're all dealing with right now.

AT-A-5 Moreover, the NRC's public notice, as an example, that went out on November 2 of this meeting, contained an inaccurate link to the public electronic reading room. I tried to access it and it didn't work, and fortunately I got ahold of Andy Kugler who works on the Hatch relicensing issues, and he gave me a current one.

Well, for a lot of people that got that link, that's all they'll do, they'll go to that link and it doesn't work and they think they don't know how to use their computer and then they just go home. So again, the accuracy of information that's going out right now, we have to be very aware of when there are mistakes made.

For citizens concerned about issues at Plant Hatch in south Georgia, unless they have a hard copy of the relicensing documents, it is difficult for them to look up concerns that would be relevant to today's meeting because those relicensing documents are no longer available on line. We did have a link to it on our website, but you know, we all know it's not working.

So folks that addressed me from the Darien, Brunswick, Baxley area that wanted to come to the meeting wanted to look at those notes. And you know, I can cut and paste what I wrote up and other things, but once again, you know, to keep people interested like that, they're not going to jump through hoops like that and none of us really should expect them to because we know how boring -- some of you are glazing over right now -- these meetings can sometimes be.

AT-A-6 Therefore, we feel it is important to both extend the public comment period until these documents can be made readily available.

AT-A-7 Also, it is essential to provide more meeting locations to gather public comments.

Four locations is not enough, given that we have nuclear reactors that will eventually be decommissioned in many states and the public, as I've said, has had difficulty accessing the information. We don't even have any nuclear reactors in Atlanta and nobody wants to come to Atlanta -- I don't want to come to Atlanta.

I like Savannah. It's a long drive and yet I'm doing this full time and 60 some years from now when Plant Hatch finally gets decommissioned, I'm going to be retired but I'm still going to be hobbling up to these meetings because I'm dedicated and I'm very concerned about it.

But I think we do need to extend the public comment period to address the inability of getting the information easily, and have more meetings. And I know that's a burden on the NRC staff because not a lot of people show up, but there are some very good comments that come out of these meetings and they're important.

AT-A-8 Georgians for Clean Energy promotes the shutdown of our unsafe nuclear power plants here in Georgia and the phase out of nuclear power nationwide.

AT-A-9 We also advocate for sound, systematic policymaking regarding decommissioning.

AT-A-10 Since many nuclear contaminants are extremely long-lived and dangerous to humans and the environment, decommissioning measures need to be handled most carefully, as our future generations literally will depend on how well the job is done today.

AT-A-11 The notion presented by industry and others that decommissioning is inherently safe because the plant is no longer operating is a deceptive argument that confuses the public. Due to the nature of radiation, even after shutdown, parts of the plant, as we know, remain highly contaminated and extremely radioactive. The nuclear waste, such as the spent fuel produced by the plant during operation generates heat and emits radiation for thousands of years after the plant is shut down. Therefore, there is risk to the workers at the plant and to the local communities during decommissioning.

AT-A-12 Getting onto a brief comment on security, as many things are being reviewed in light of September 11, the decommissioning of nuclear reactors should be no exception. From what I've heard today, it sounds like there will be some sort of analysis of security issues and I hope that's directly relating to this decommissioning document. As we know, the draft EIS is grossly deficient in ensuring that security measures are taken to protect our homeland security from threats of sabotage at a nuclear plant. Georgians for Clean Energy request that a thorough amended review of necessary security measures be compiled by the NRC and added to the supplement.

AT-A-13 Again, this highlights the need for an extended comment period and careful analysis of this issue. For instance, I'm sure there are a number of nuclear security organizations worldwide that perhaps this draft and others within the NRC could be opened up to get their comments and maybe their suggestions of what they're doing in other countries or whatever, because we're looking at a global assault now, not just one person down in south Georgia acting like a weirdo.

It is now abundantly clear that nuclear materials are desired by terrorist organizations. Not only are our operating nuclear power plants terrorist targets but so too is the nuclear waste they
AT-A-14 generate. Since a decommissioned nuclear power plant would have a greatly reduced security force, the closed plant could provide an easier opportunity for terrorists to obtain nuclear material.

AT-A-15 In the case of plants like Hatch, that have outdoor storage of nuclear waste, the notion of a reduced security force is even more troubling.

AT-A-16 And I probably have a question in there because I wasn't sure, reading through the document itself, where, like the outdoor storage facilities at Plant Hatch and elsewhere -- how they are dealt with after the plant itself is decommissioned and if the license is terminated. I'm not sure how that works and who's responsible and I would like more clarification on that. So maybe I can get some of these cards afterwards.

And then getting to the site-specific concerns, and I didn't ask questions during Ms. Hickey's forum because I can't even formulate them because I'm so confused by that section.

AT-A-17 Georgians for Clean Energy does not believe that a Generic Environmental Impact Statement regarding decommissioning of nuclear facilities is a sufficient tool for evaluating impacts borne to specific environments from decommissioning a nuclear power plant.

AT-A-18 We disagree with the process -- and it happened during the Hatch relicensing too -- the process of using the significance levels of small, moderate and large for a variety of issues at a variety of locations, to come up with a generic one-word answer. The classifications are generic in form, hard to understand and even though it's small, moderate and large which sounds easy, I fundamentally have a hard time explaining that.

Crabbing season is listed, you know, as a small concern because it's a small aquatic problem. I can't even say that clearly because it's just very confusing; therefore, it is difficult to figure out how the NRC came to those characterizations.

AT-A-19 We disagree with the NRC conclusion that most of the environmental issues they addressed are deemed as quote, generic and small for all plants, regardless of the activities and identified variables, end quote.

I would enjoy hearing the response to that statement from fishermen downstream of Plant
AT-A-20 Hatch on the Altamaha or Plant Vogtle on the Savannah. Once again, that's where having other meetings outside of the area could gather some useful information that may have been missed and maybe site specific that wasn't addressed earlier.

AT-A-21 As we saw in Eva's presentation, at least two site-specific environmental issues were identified, threatened and endangered species and environmental justice, with four other issues listed as quote, conditionally site specific. That is ludicrous.

AT-A-22 We request that licensees undergoing or planning decommissioning require a new environmental assessment. This will become more clear as I go on.

AT-A-23 It is not acceptable to give the option of using recent environmental assessments. What is the definition of recent? For instance, data from the 1970s on several fish and seafood species was originally used in the EIS for Plant Hatch relicensing.

Though newer data later emerged because of Fish and Wildlife Service and other people raising a bunch of concerns, we finally got new information. I don't have any safeguard that Plant Hatch won't use studies from the 1970s or from the year 2000 on the endangered species such as the shortnose sturgeon when they begin decommissioning decades from now.

So I would like a definition of what is recent and if we're talking about endangered and threatened species, that list is going to change when a lot of these power plants actually go through decommissioning because species are being put on and taken off those lists all the time. So what is recent? I would request, our organization requests, that they always have a recent, a new, like that year that they decide to decommission, an environmental assessment.

AT-A-24 Additionally each nuclear power plant has a different historical performance record that may have impacted the surrounding environment in ways that are unique to the facility. What makes it acceptable to ignore these operating histories when decommissioning?

AT-A-25 Furthermore, some nuclear plants, like Hatch, have overflowing volumes of nuclear waste that are now being stored outdoors which impacts the environment and could affect decommissioning.

AT-A-26 Likewise, there is no experience in decommissioning nuclear reactors that have operated beyond the original 40-year license period. Again, Plant Hatch may pose a unique example if the aging plant is relicensed.

AT-A-27 The degradation that will occur due to the constant bombardment of radiation could affect how the plant is dismantled and how the radiation exposures will be for workers and could easily add new accident scenarios. For instance, Plant Hatch has a cracked core shroud, and I know other plants do, too. But I don't know -- that's question, I guess, have any of those been dismantled? How will that deficiency affect decommissioning?

These factors, among others, must be incorporated in addressing the decommissioning of individual facilities.

Ed Martin touched on economic concerns and we have some similar and a couple different
AT-A-29 from his. Georgians for Clean Energy requests that all decommissioning costs be borne by the parent company of the licensee in perpetuity. The parent company should not be allowed to recoup the cost of decommissioning from the ratepayer or federal government through the taxpayer.

Ratepayers and taxpayers in Georgia have already had to pay far beyond their share of promised cheap nuclear power that has brought one of the largest rate hikes in the history of Georgia. Furthermore, private landowners, whether residential or commercial, farms, federal, state, county, city, community properties or others should not be responsible for the costs of monitoring, containment or clean-up.

AT-A-30 Georgians for Clean Energy is also concerned about economic impacts to the local communities associated with decommissioning. Currently, according to the NRC relicensing documents on Hatch, Appling County, where the plant is located, receives an unhealthy 68 percent of its tax revenue from Southern Nuclear. Provisions for environmental staff and maintenance staff be established in perpetuity and all costs be borne by the parent company of the licensee.

The local community should not have to shoulder these costs. In the case of Appling County, after they lose their tax base, they would not even be able to remotely afford any type of monitoring. Again, it is apparent that communities are left dealing with tremendous problems and little or no resources to address them properly. Quite a reward for being loyal to the company.

AT-A-31 Regarding economics, the NRC needs to pay attention to decommissioning costs proposed by Georgia nuclear utilities during rate cases and other proceedings so there is not a situation created where much needed monitoring and maintenance is ignored simply because there was no regulatory attention to the real cost of decommissioning.

I'm finishing up. My apologies for taking more than five minutes.

On the environmental side, we have several concerns with the environmental impact section of
AT-A-32 the draft. Again, we feel that a site-specific analysis must be done for each individual nuclear plant. This includes the area of the site itself, along with downstream and downwind regions and all areas within the ingestion radius of the facility.

AT-A-33 There are right now already elevated levels of some radioactive contaminants nearly 100 miles downstream of Plant Hatch and Plant Vogtle.

AT-A-34 It is hard to believe that decommissioning activities will have a small impact on water quality or air quality. Construction and demolition sites across Georgia, most of which do not have nuclear contaminants fortunately, contribute to the degradation of our rivers and air. How can an enormous project such as decommissioning an entire nuclear plant, which will involve the handling of nuclear contaminated materials have a small impact?

AT-A-35 We request a copy of the analysis that was done to make this determination.

AT-A-36 Additionally, a thorough analysis of groundwater impacts seems lacking. Given Georgia's current concern over the Floridian aquifer, it is again hard to believe that something fundamental to life , water, is being analyzed generically. Future generations will depend on the resources that we are polluting today.

AT-A-37 We adamantly disagree with the possibility of rubblization as a method of decommissioning. Chopping up a plant and storing it on site not only sounds ridiculous, but also is grossly negligent of the fact that there are facilities designed, built and licensed to handle radioactive materials.

Georgians for Clean Energy does not promote the idea of shipping nuclear waste to other people's backyards, but recognizes that although organizations critical of nuclear power often forewarned local communities of these potential dangers, plant owners never told communities near nuclear plants that they were also accepting a permanent nuclear waste dump. Rubblization is an egregious assault on the public participation process and a devious example of corporations casting aside those communities that supported them over the years.

AT-A-38 Georgians for Clean Energy also opposes any efforts by the nuclear industry or licensee of a decommissioning nuclear plant to "recycle" -- and I use that in quotes -- radioactive materials for release into the marketplace. It is appalling that there may be an option for companies involved in a technology that can cause its own facilities to become radioactive, to financially benefit from selling the hot garbage to unsuspecting citizens in the form of daily household products.

AT-A-39 Under health and safety. The nuclear facility's land, even after decommissioning, must not be allowed to revert to public or private use, even if the NRC believes that the radioactivity on the land is less than 25 millirems per year. Additionally, in no circumstances should future buildings, structures, etc. be built atop the former nuclear site.

The draft GEIS mentions that tourism activities are planned for the Trojan nuclear plant in Oregon after decommissioning. Under no circumstances should that be allowed at any of these sites. Bringing tourists or school groups to nuclear plants that are running now is not

acceptable. It's dangerous. I was just in Oregon for my honeymoon, and I just can't imagine going and touring that site. There are a lot of beautiful things in Oregon but the Trojan plant ain't one of them.

AT-A-40 Ms. Barczak: As we have stated in earlier comments, adequate attention to issues surrounding economic justice and the long-term negative economic implications of decommissioning plans in the community have not been thoroughly studied. Reactor sites are often contaminated and made undesirable and unsafe for future economic development.

AT-A-41 And again, we feel that site-specific studies should be conducted. The economy of rural Georgia is much different from that of urban New York.

AT-A-42 In conclusion, as we have stated earlier, the methods used to decommission a nuclear plant will affect not only the communities of today but also the livelihood of future generations.

AT-A-43 The nuclear industry is leaving humankind a legacy of devastation, epitomized by its long-lived and highly dangerous nuclear waste.

They are unable to solve their waste problem and now, when faced with the eventual shutdown of their plants, are unwilling to take measures to ensure that the public is protected.

AT-A-44 The NRC is charged to protect the quality of the human environment and we ask that they can -- that they do all they can to uphold that charge. The current draft GEIS is not protective and needs major improvement.

AT-A-45 We again stress system need for site-specific EIS studies on decommissioning for nuclear power reactors. Our communities, from the people to the waterways, are unique and entitled to nothing less.

Thank you very much.

AT-D Ms. Kushner: Thank you.

My name is Adele Kushner and I'm with Action for a Clean Environment, which is a group located in northeast Georgia -- very rural northeast Georgia. But all of our members live about 50 miles from the Oconee plant, so we're specifically interested in what's going on.

I'm not really prepared for this. Our group deals with so many issues, air quality problems from asphalt plants and feed mills and anything else that comes up. Also, I haven't even read that big fat supplement. So I'm just speaking in response to what I have learned, and the more I learn, I think the worse it gets. I would love to have a copy of Sara's comments because she hit on a whole lot of stuff that I would like to know more about.

What I do know, I learned from someone who lives and works near the Yankee Rowe plant in Massachusetts and told a group of us what happened when it was decommissioned and cut apart. You know, closed down and cut apart. She said the whole process was just horrendous.
AT-D-1 The cost is one thing. It was awful, very high cost, up in the millions. I don't remember how
AT-D-5 much. But things that shouldn't have been done did happen and things -- you know, when they were washing some of the surfaces to prepare for cutting apart and shipping the washwater -- I've spoken about this to some of the people already. It just went into the ground. It was supposed to be contained and it wasn't. And other things like that that happened that were not supposed to happen, but they do happen.

I don't know if it was the supervision, or the plan, or whatever it was. I understand this was after 1991 when there had been experience with some decommissioning. It was -- it was poorly
AT-D-2 done. There was danger to the workers. The workers were not prepared. They didn't -- whatever the -- the moonsuits they were supposed to wear or something, they often didn't. And it was -- I mean it's dangerous.

AT-D-6 This is a very dangerous material and the danger lasts for such a long time. If you're going to cut apart a plant and pack it and ship it, everybody along the route is exposed to the danger
AT-D-7 and whatever is left is an exposure to the people who still live there. You talk about burying it somewhere, well everybody is in danger when you do this kind of thing. So it doesn't make any
AT-D-9 sense to me to ship things off to someplace else. You need to keep it where it is and somehow seal it off, and then you have to monitor it for years and years and years because none of this goes away. So the whole process just seems like it's fraught with difficulty.

AT-D-3 Generic things sound good, but each plant is different. I was originally thinking well, they are all kind of the same system, so it wouldn't matter, they are on the same principle, but they're not. I mean, there are differences.

AT-D-8 The Oconee plant, which I'm near, which we've gone to visit, it scares me. I mean the reactors look like they're really solid. One thing they're going to do is cut into the wall to take -- to change the steam generator. They're only going to put it back and somehow -- is it going to be
AT-D-4 as strong as it was before? The excess storage -- I mean the storage in pools, but there's a whole lot setting out in dry casks very vulnerable to whatever comes along; whatever happens. I mean the whole thing is just -- I don't know how in the world they're going to deal with it.

AT-D-10 I'm now concerned about the costs, about all the broken promises, because these all sound -- all these systems sound so good. But I can remember -- I'm old enough to remember when this was going to be clean, safe and cheap. Electricity was going to be too cheap to meter. That sticks with me. And we know that it's as expensive as anything possibly could be when you consider the whole -- the whole cycle from the mining of the uranium to what happens
AT-D-11 afterwards. There's a huge process. It affects people's health. Workers especially who are not warned, who are not protected.

I'm not prepared but I'm going to learn some more.

AT-E Mr. Genoa: Yes, thank you, Chip. Paul Genoa with the Nuclear Energy Institute.

AT-E-1 The question goes to the issue of the rubblization and the language in the GEIS that puts part of it out of scope and part of it is discussed as being covered under the generic environmental impact statement supporting the license termination rule. The heart of the comment and question really gets at the issue that from our perspective is not yet covered in that license termination rule and the assumptions embedded in that GEIS. And that has to do with the scenario of what happens and what are the assessments for the radiological materials post license termination.

The rubblization is one angle that begs that question. A similar one is a technical issue we talk about as an embedded pipe. If you can imagine, a large nuclear facility with very thick walls. You know, three or four feet thick with piping that penetrates these walls. In fact, the piping is literally embedded within the concrete walls. The standard approach is to truncate that piping as it breaks into an open room. To clean that piping -- the length of that piping, to survey that piping, then to seal the ends of that piping and fill it with the grout or some other material to fix any residual radioactivity within -- inside of it.

The license termination rule would have you access the potential dose to a occupational worker in what they call the building scenario, or building occupancy scenario. We understand how you might address the potential exposure from this embedded pipe onto an individual who would work in that room. You might sum that direct exposure from the pipe with all other exposures that might occur from materials within the room, put them together, compare it to the standard, 25 millirem, and determine whether you meet the criteria or not.

The question is do you need to assume some refurbishment scenario post-license termination? Do you have to assume that someone determines it would be in their benefit to knock the wall down, to remove this embedded piece of pipe and to do something with it? You know, one could postulate that.

The question the industry asks is how do we address that. Do we come up with some scenario and refurbishment that would account for that? What would that scenario look like? We need that information so that we can do those assessments. Our understanding and reading of that GEIS and the license termination rule is that that refurbishment scenario is not limiting, that, in fact, the building occupancy scenario of someone working 40 hours a week, etc., etc., in that room is limiting if that's the case. That's what we wanted to know.

I draw the parallel because this is similar to the rubblization idea. Again, the idea that when you dismantle these buildings, knock them down, there will be basement structures. You're going to knock them down and you're going to end up with rubble on the side. You need to fill these basement voids. You either need to bring material from off site or you could potentially use some of this fill, this rubble fill as beneficial fill for these facilities. There could be residual radioactivity associated with it and it would be subsurface.

Again, the issue is post-license termination. How do you access a potential risk to a member of the public from that material? It's fairly straight forward to understand that the resident farmer scenario requires you to assume that that residual radioactivity could affect a resident farmer through groundwater pathways, inhalation and ingestion. You know, getting into crops, irrigation, all of that.

The question is, is there some unique pathway that needs to be assessed for this material, such as an intruder pathway? Do we have to assume post-license termination that someone comes in and digs up this material and uses it to build a pier or uses it for rip-rap or for a roadbed or some other material?

Clearly the industry could calculate the results of those scenarios. It was our understanding in reading the original GEIS for decommissioning back in '88, that that was considered and assumed to be non-limiting. That the resident farmer would be, in fact, limiting.

Our understanding was this GEIS would sort of beef that up because of this new idea; however, it appears that that was sort of left out of scope and appropriately maybe so. Perhaps that is in the scope of the license termination rule. But my point in all of this -- and I know it's rather technical and I'll be happy to express in layman terms anything that's not easily understood.

The industry wants to do the right thing. They need to know what the requirements are. This issue of what are these hypothetical potential pathways post-license termination, I believe, one easily addressed. We just need to know what the boundaries are and what the assumptions are that we need to impose, if any. We had hoped for some of that to come out in GEIS. It may still be appropriate to do so, otherwise perhaps other guidance is necessary.

AT-B Ms. Zeller: Okay. My name is Janet Zeller and I'm Executive Director of the Blue Ridge Environmental Defense League. We'll have our birthday -- 18th birthday as an organization in March. We work in North Carolina, South Carolina, Tennessee and Virginia and occasionally in north Georgia. I'm looking forward to coming back to Adele's community in February.

AT-B-5 We have some grave concerns about the process. I would like to just say that we would like to reiterate the comments so beautifully presented by Sara Barczak about the process. There is a real problem I think with public knowledge about the opportunities for input into NRC's decision making. And one of my favorite attorneys describes the NRC decision making processes and

AT-B-6 draft documents as whipsawing the public because it really may matter to you, Ms. Hickey that the license termination document details one level of exposure while the draft EIS on decommissioning details another level of exposure.

AT-B-7 But to the people in the affected communities, it is a problem and that problem is one that they're going to have to live with after the NRC has washed its hands of the site. So we do have some real problems with the fragmentation of the decision making process and the public participation opportunities, and believe that indeed that there are NEPA violations.

We are on record opposing the license extension for -- in fact, we've intervened in the license

AT-B-8 extensions for the Duke reactors, McGuire 1 and 2 and Catawba 1 and 2. We believe that the decommissioning document has definitely underestimated the impacts of the additional license extension period. In fact, the minimization of that impact I think is a major flaw in the document in that there needs to be a reassessment of all of the impacts, including cost, but also including the aging issues, including the waste issues and other off-site environmental impacts for license extension periods.

AT-B-9 The potential use of plutonium fuel at the McGuire and Catawba reactors is not adequately addressed in decommissioning -- in this decommission document. In fact, the costs of decommissioning are nowhere to be found. So we would request that there be a supplement right away before mistakes are made in licensing the use of plutonium fuel at the McGuire and Catawba reactors because the decommissioning impacts, including costs, and also including the additional radioactivity, the additional waste, those are real impacts that are basically left unaddressed in the generic environmental impact statement for decommissioning.

AT-B-10 We're familiar with some of the decommissioning models that the NRC is using. Believe me, Yankee Rowe, Connecticut Yankee and Maine Yankee are not good models for anyone to follow for subsequent decommissioning.

In fact, this is such an important issue that it really is inappropriate, I think, to make it up as you go along. We were able as an organization, with some help from our friends from the Citizens Awareness network in western Massachusetts to track the train carrying decommissioned parts of Yankee Rowe from western Massachusetts all the way to Barnwell.

Now this was supposed to be a dead secret, what route the train was taking through the several states, Pennsylvania, Virginia, et cetera, on its route to the burial ground near our Aiken, South Carolina office. It was very easy for us to, with little man and woman power, to do the train spotting for tracking -- no pun intended -- the route, the progress of this -- of this waste shipment.

So I hear in Rockville, Maryland at the Atomic Safety -- no Atomic Reactor Safety Board meeting and at the recent hearing in Rock Hill, South Carolina and again tonight that there is a top to bottom review of security and terrorism issues, yet the process of decision making continues unabated. We need a cessation in NRC decision making until there is this top down review of security and terrorism issues.

AT-B-11 If an organization like ours can spot a train carrying very dangerous radioactive waste, any terrorist organization can do the same thing. You've got to take that into consideration.

AT-B-12 The whole approach -- the whole probablistic approach to risk is inappropriate. You must assume that whatever can go wrong will go wrong and that should be the level at which your risks are evaluated, not some unrealistic dream-like assessment of probability that isn't real world anymore.

AT-B-13 I'd like to invite you to come to Charlotte. At the last hearing that NRC had in Charlotte, which is in the midst of four nuclear reactors, we had standing room only. Chip was there. One hundred and fifty people I counted before I stopped being able to count. We could, I think, fill up a hearing room so that you could hear from the citizens who are directly affected by your decision making that is on going.

AT-B-14 There are changing community conditions at these reactors. I don't mean to be disrespectful to the representative from NEI, but we don't have a problem in the Charlotte area of a resident farmer. We're more likely to have a golfer going on the site of a former nuclear plant to retrieve a golf ball because the -- against a unanimous decision by the Mecklenburg County Planning Board -- last night the Mecklenburg County Board of Commissioners approved a 4,000-plus home development by Crescent, which is, of course, Duke, around the Catawba reactor. So there are changing conditions at these nuclear power plants that deserve your attention and will not fit into any generic environmental impact statement.

AT-B-15 Twenty-five millirems additional per year of exposure added to an increasing background, which is certainly man made, and I say man made. I mean women had very little to do with the decisionmaking that went into increasing the background radiation that all of us are exposed to. But 25 millirems per year additional exposure is way too much.

Mr. Scaletti may have that kind of dose to salt his cells, and his gene repair mechanisms may be sufficient to withstand that dose and he may not get a fatal cancer. Mr. Masnik may get a fatal cancer from an additional 25 millirem per year dose. This is a roulette game. So the dose is way out of line for the restricted use, not to even mention the unrestricted use, which I'll get distressed if I do, so I won't.

So I do ask you to look at what we were promised by the PR in slick talking pictures in color when nuclear power was first laid out to decision makers and to the people of the North Carolina Electric Membership Corporation who -- well, unsuspecting, idealistic folks decided to buy two-thirds of Catawba 2 nuclear plant. Which actually I guess as a member of one of those coops, I own a piece of it as well.

AT-B-16 And we were tacitly or directly promised a 50-year cooling period for the nuclear power plants. I can go back and drag out some of those documents if you want to see that. And two-year cooling periods for Yankee Rowe before it's chopped up and decommissioned is unthinkable. You know, we will not approve of and we will fight diligently in every opportunity and arena we have a hot, quick and dirty decommissioning which violates the promise of future -- safety to future generations.

AT-B-17 So I'm really interested in this entombment rule making process and I promise you that we will have a lot to say about that because that really is the only option for what to do with these plants.

AT-B-18 I certainly heard Eva loud and clear, that the amount of exposure for decommissioning is less than for operating reactors. So our organization is certainly in favor of decommissioning. Let's just do it right.

AT-F Mr. Zeller: My name is Lou Zeller and I'm on staff of the Blue Ridge Environmental Defense League and I have been since 1986.

My comments tonight fall into several general areas, but I want to begin with one brief comment, which I think is worth quoting directly because it's so striking. Within the executive summary it talks about the potential radiological impacts following license termination related to activities during decommissioning are not considered in this supplement.

AT-F-1 Within the same paragraph it talks about the non-radiological impacts following license termination that are related to activities performed during decommissioning are considered in this supplement. We are considering in this supplement the non-radiological impacts following license termination, not the radiological impacts after a license termination. This is a radiological device, a nuclear reactor. I cannot understand how that could even be in the executive summary to describe the document which is under review.

AT-F-2 I do want to talk about the physical protections and the existing regulations under 10 CFR 7355. I guess I could state this as more or less of a question. For example, what measures will the Commission employ during decommissioning to protect against radiological sabotage?

AT-F-3 I understand fully that this document is to cover non-accident decommissioning activities, but once a reactor is decommissioned, I find nothing in this thick document where it addresses at all the generic, or under generic or site-specific issues the impact and the effects on the structure, systems and components of an event which happens during decommissioning.

AT-F-4 And, of course, the radioactive fuel pools are the principle source in that case of radioactive contamination. Even 10 CFR 73.55 falls short in our estimation in the preparations for such a scenario. 10 CFR 73.55 considers only primary physical security barriers for vehicles, for isolation zones, for access to the plant, for detection of intrusion and what not. For example, it mentions that there be bullet resistant walls, floors and doors in reactor control rooms. Well plainly this 10 CFR 73.55 needs to be updated because this is woefully inadequate to consider anything which is now possible after September the 11th.

Even within this existing rulemaking process for existing outline of environmental impact assessment, the actions to date which the Commission is taking leave me to scratch my head. For example, on November the 21st of this year, Maine Yankee received information regarding as classified, safeguards information that is, for the purpose of amending the license for an exemption from 10 CFR 73.55.

This document here, which was pulled down by my colleague from the Adams site, talks about it quite specifically. Although there's not a lot of detail here, it does talk about the fact that the independent fuel storage installation sabotage assessment performed by the staff in review of Maine Yankee Atomic Power Company's application for license amendment and exemption, Maine Yankee is undergoing decommissioning.

AT-F-5 Now my point in bringing this up is that the NRC cannot continue to allow rulemaking to be driven by exemption as it has been done in the past. It lowers the bar for all subsequent actions every time an exemption is made.

The second major issue that I would like to cover in my comments tonight -- and we will be submitting written comments before the comment deadline -- has to do with radiation effects during decommissioning operations. In appendix G there is a fair amount of detail about the Veer 5 (ph) report and the excess cancer deaths and the estimates from that.

Within appendix G, there is information which gives an estimate from radiation impacts to the public of 0.8 percent. That is 800 fatalities per 100,000 people. It's also outlined as 8 times 10 to the minus 4 fatalities per person rem. Those are stochastic effects, of course, only outlined in this report.

AT-F-6 One problem here is that the only non-stochastic effects considered in the GIS -- GEIS are those related to above threshold doses which cause such things as cataracts or other high dose morbidities. This is unacceptable. There are many morbidities which are associated with low dose radiation which do not rise to the level of effects on cataracts, such as the effect on the human immune system and many other non-cancer effects. This is missing from the generic statement.

Okay, to continue on to the effects outlined with regards to radiation protection considerations in decommissioning, the generic -- the appendix G on page G-4 says that in Veer 5, quote, in general, estimates of risk derived for doses of less than one gray or 10 rems are too small to be detected by direct observation in epidemiological studies.

Number one. The linear dose response model, which is outlined again in this document, does not meet reasonable conservative risk analyses which are based on the super linear dose response relationship, which is, I think, once again a conservative method of estimating the effects on the public as well as workers in a plant during decommissioning -- well at actually any time.

Continuing along these same lines, the risk factor here of 0.8 percent amounts to, as I said before, 800 fatalities per 100,000 people. If we look at the existing decommissioning estimates of 11-person rems from the Haddam Neck Plant in Connecticut, this would amount to 8,800 fatalities per 100,000 people.

AT-F-7 Now, again, the document here outlines the fact that most -- the major impact from radiation would be from low level radioactive waste transport of the reactor itself, the vessel, to a low level radioactive waste site. People living all along the waste site, primarily people living in town around that reactor, and all along the transport route along the way to -- if it's South Carolina or Nevada or whatever ultimate destination this reactor vessel would have, amounts to many thousands of people, if not hundreds of thousands or millions of people. This level of human carnage cannot and should not be considered as quote, too small to be detectable.

Thank you.

AT-G Ms. Carroll: I'm so impressed with what I'm hearing here tonight. My name is Glen Carroll and I'm with Georgians Against Nuclear Energy. I met Chip Cameron eight years ago -- nine years ago over this issue. I want to say that I feel really honored to be participating. I feel like we're all here, we're pioneers. We don't know how to decommission and we're trying to figure it out.

So I would say with this kind of work, with maintaining good will towards each other and maybe a little prayer and divine assistance, I hope we're going to end up doing a good job.

Oh, Eva -- now I don't know, this is a pretty good thing to keep up there. Do you think you could get the definition up there because I'd kind of like a power point assist. However, I did keep looking and I did find it in the EIS. It's sort of like rubblization.

(Laughter.)

Ms. Carroll: Oh, hey, Warren. He transcribes all of our stuff when we intervene at the NRC. I've known him for a long time, too, through Georgia Tech, which is decommissioning and they didn't invite me to a meeting.

Okay, the process of safely removing a facility from service followed by reducing residual radioactivity to a level that permits termination of the NRC license.

So, you know, except for the fact that there's only one universe I know about and it's got all of this radiation in it and there's like no way to take it to -- I don't know, it's not a real perfect
AT-G-1 premise. I'm real happy to see entombment is coming up and getting more discussion because it is the area that we look to, the avenue that we think will yield the most protection for the public ultimately.