Appendix P

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SF-A Mr. Sokolsky: David Sokolsky with Humboldt Bay Power Plant.

SF-A-1 Will this Supplement replace entirely the previous NUREG-0586?

Mr. Scaletti: It will replace in entirety -- or it's a standalone document for nuclear power reactors, yes.

Mr. Sokolsky: Okay.

Mr. Scaletti: The other facilities within -- NUREG-0586 is still applicable to those facilities.

Mr. Sokolsky: All right. That was my understanding in looking at this Draft Supplement, that anything from the previous NUREG is included in the Supplement that's applicable.

Mr. Scaletti: That's correct.

Mr. Sokolsky: So when we respond we no longer have to look at the previous issue, just this Supplement.

Mr. Scaletti: That is correct.

Mr. Sokolsky: Okay. Thank you.

SF-B Ms. Cabasso: My name is Jackie Cabasso. I'm the Executive Director of the Western States Legal Foundation.

SF-B-1 And I have a question for Eva which is that in reaching your findings about these impacts, these environmental impacts, the generic issues and impacts, I'm wondering what the baseline you were using was to measure those impacts against.

In other words, were you comparing the impacts to the site before the nuclear facility was built or during its peak operating period? And in that case were the impacts considered cumulative or standalone?

Ms. Hickey: Okay. Let me make sure I understand your question. You want to know what the baseline was that we were evaluating against --

Ms. Cabasso: Um-hum.

Ms. Hickey: -- and then whether we looked at the impacts cumulatively.

Ms. Cabasso: Um-hum.

Ms. Hickey: What we were comparing against was, we would look at the impacts that were identified in any previously-written environmental impact statements, final environmental statements that the licensee had published, and any other environmental assessment that had been conducted during the operation.

So we were weren't necessarily looking at the impact; we were looking at the way the impacts might change from during operation, not necessarily from the way the plant was prior to operation. So we were comparing those impacts with other environmental impact statements that had previously been written.

And, yes, we did look at cumulative impacts.

SF-B-2 Ms. Cabasso: Now just could you elaborate on that a little bit? Because what I was asking you was then cumulative impacts in terms of the plant during its operating period with the decommissioning activities added onto it, or do you mean something else?

Ms. Hickey: Well, we looked at it in a variety of ways. We would look at whether the impacts from all of the activities -- well, okay. The radiological was kind of an easy one to establish. The impacts from all of the activities individually and then how cumulatively the radiological impact to the environment would end up.

We also looked at them across the issues, so we would look at activities -- at an activity and see -- I'm sorry. I'm having a hard time describing this. But we would look at them from -- at an activity and then look at water quality and how water quality might impact potentially air quality or any of the other issues. So from that perspective we looked at it cumulatively across all the issues.

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.

AT-G-2 One of the things that has to be acknowledged I think or anticipated is the failure of the United States nuclear waste program on all levels, so that low level dumps are not getting established, high level dumps are not getting established. Therefore, we may really have to keep a lot more of this radiation on site than we had anticipated.

AT-G-3 There's a financial assurance gap here, I feel, and this has been mentioned several times tonight. I'll say two syllables -- Enron. And we've got nuclear power plants, you know, they're fast becoming white elephants and getting snapped up at Salvation Army prices by multi-national corporations -- Enron. And we don't really know if we're saving up enough money -- and I could be wrong about this but I thought the money was somewhat linked to the rate base and all these plants are not operating for their design life.

And so I'm real concerned that the fund was never -- the goal was never set correctly to begin with and that we would fall short on raising the money, it may not be enough. There is inflation. So what I don't know is are these figures periodically revisited and adjusted -- they are. I would think the utilities would tend to howl about that.

Is there assurance or something for a corporation a couple of generations removed from the corporation that actually originally licensed and built the plant? They are paying, you know, sometimes a tenth or a quarter of the decommissioning fund that they acquire with the plant, and so, you know, I would like to know what the assurance is that that money won't be absconded with and just disappear -- Enron.

AT-G-4 Love Canal, kudzu, gypsy moths, zebra mussels. One idea that we've talked about for a long time, and we actually had a big meeting about it and I think the idea is probably still alive, the site-specific advisory board. Really this is outside of engineering and physics, this is thinking political science, archaeology. But thinking archaeology ahead of time, how can the people remember -- whatever we decide, how can the people remember, how can we regulate -- you know, what kind of systems can we set up?

And so I'm an artist by profession that wandered into this arena. I don't get this lax visual imagery, I'd like to see more pictures. So I'm going to describe an idea I have for you --

AT-G-5 entombment taken to an aesthetic level.

You've got like contaminated soil, maybe even mill tailings if we could figure out how to get them there -- fill everything in and just build out soil barriers, barriers, barriers, make it a pyramid, make it vast, make it huge -- sell tickets for the first few generations. And I even think possibly the geometric -- the geology of this might even be an earthquake that just keeps falling in on itself. You hit it with something, it just keeps falling in on itself.

Now there's a question of subterranean -- what's the subterranean issue here and, you know, forget practicality, forget cost, which I would like to do that, I mean I really would not like cost to be much of a factor here. We need to do what it takes. So probably you need some subterranean things, definitely a site-specific idea I've got here.

And then let's plant spider worts around it because everybody knows that spider worts are shown to -- they have these little blue hairs, maybe they're called stamens or something that's the pollinator part of it, and they are like these incredible plants that -- there's this perfect correlation for the amount of radiation exposure it gets.

These little things turn pink, these little hairs turn pink. And it's been like studied and it's a good correlator. So we need to plant the spider worts, which is basically a weed and then we need to teach the people how to analyze. You know, we can't forget the technology of microscope. That's pretty easy -- lenses. And the site-specific advisory board and actually, you know, this sounds kind of corny, but I'm your artist speaker tonight -- the nuclear priesthood has been talked about seriously. Religion is probably a good model for long memory.

I cannot thank my colleagues enough for being really prepared with really thoughtful, with technical comments. I think the fact that we've been working on this for nine years -- I remember you from previous meetings -- this is deliberate and it's what's required to do it.

Thank you.

Ms. Carroll: I'm not going to invoke Atlantis or Elvis -- I could -- and Diablo. I figure it's getting subducted over there on that leading edge and that might be a solution, you know, underneath the mantle.

AT-H Mr. Ferguson: Tom Ferguson, Physicians for Social Responsibility. Very few words.

AT-H-1 My executive director asked me to express our concern for we want this process to be transparent. Allow public accessibility to the process, knowledge of the standards. Do no harm. We represent physicians who take the Hippocratic Oath. Take no risks that can be avoided. It seems ridiculous to come in here and say to professionals "be careful." But Adele quoted the too cheap to be metered promise and there's some credibility problems, so be careful.

We'll be submitting written comments.

Mr. Cameron: Okay, thank you, Tom.

I think there's a number of things that we might be able to clarify. This is not the time for the NRC staff to try to comment on the comments that we've heard, but there were a number of questions within the comments that I think that it might be useful since we have a little bit of time, for the NRC to provide some clarification on.

I'm just going to list some of these that I took down and then I'm going to ask Barry Zalcman from the NRC staff to just give us a little bit of a review of what the NRC is doing. We heard this top to bottom or bottom to top, whatever, review.

But I think Sara Barczak indicated that there was some ambiguity about how was spent fuel treated under this decommissioning process and of course there's various ways to store spent fuel and maybe Eva can talk a little about that one when we get there.

Again, Sara talked about using the example of how do you explain to a fisherman small, medium, large; that that might not sit well. And I thought, Eva, perhaps you could just talk a little bit more about the small, medium and large. I know you already talked about where that was derived from, from the Council on Environmental Quality, but perhaps you can say a little bit more about that.

Lou Zeller read a statement from the executive summary about non-radiological after license termination being considered, but yet some radiological not being considered. And I think there's a fairly straight-forward answer to that, that I think Eva can also address.

And finally, I think it might be -- Glen brought up Enron and decommissioning and is the fund tied to operation. And Steve, it might be worthwhile for you to just say a little bit about that fund and what happens, the bankruptcy implications, all that sort of deal so that we can give some assurance on that.

And I think that other people in the audience may have some comment. I don't want us to be commenting on other people's comments, okay? Because I don't think that that's appropriate to do that. But if you do have a fact that might be useful information for people, I'm thinking, Paul, you said that you had a couple perhaps comments, maybe facts we can get out here to increase all of our understanding of this.

And before we get to those questions, Barry, do you want to come up and just say a little bit about what the Commission is doing in what we call Safeguards, protecting these facilities against possible terrorist attack? Barry -- it's Barry Zalcman.

Mr. Zalcman: Barry Zalcman again from staff.

Actually I was going to talk a little more --

Mr. Cameron: I hate to give this to you since you said I'm going to talk a little bit more --

Mr. Zalcman: I like this instrument a little better.

Before I go into security, I touched on it at the outset, I'll talk a little more about it, I want to bring us back because there's a lot of good points that you had raised, all of you, about issues perhaps that don't apply to this supplemental GEIS. I want you to understand what happens with information that comes to the agency. We take away your comments and we identify what is relevant to the action that we're trying to deal with now -- this is a supplemental GEIS, we identified what the scope of the GEIS is.

It's operating in environmental space under the guise of the National Environmental Policy Act and the agency's regulations in that arena. It is not operating in safety space -- that's an important distinction. There are matters in safety space that have environmental components. You talk about the design of the facility and the environmental factors that lead to adequate protection -- earthquakes, tornadoes and the like. Those are environmental factors but they are considered part of the design basis of the facility. That is different than what we look at in environmental space under NEPA -- that's an important distinction.

And a couple of the issues that you raised, while they may not be directly attributable to the scope of the environmental impact statement, we think are going to be sufficiently important to share with the other groups within the agency and particularly issues associated with the events of September 11. The Safeguards Group, we will share that information with them as they consider what the actions of the agency should be in response to the events of September 11.

Now we have already taken some actions. We've gone into high alert, we've issued advisories, licensees have enhanced their security activities at the plants. The agency has an operations facility, operations center, it's manned 24 hours a day. We beefed up our staffing of that. Management is engaged in that process as well as additional staff. Our regions have incident response centers, they have been manned as well.

I can share with you that we do have an ongoing intergovernmental dialogue at the federal level. We also have it at the state level, interactions with state organizations, governors and the like.

So there are a lot of activities that are already ongoing immediately in response to September 11 and then we have to look at where do we go from here. That's where I talked about the top down review. The Commission has already directed the staff, there is a task force underway looking at what needs to be done. That is likely to result in perhaps changes. That will be shared in a public arena.

Now I lament the same challenge that you have -- and I'm looking at Sara -- the same challenge that you have. When the events of September 11 occurred, the nation went into a lockdown. We were looking at not just the infrastructure that was challenged, meaning our economic base in the World Trade Center, but there is our entire infrastructure across the country that is vulnerable and we are looking at target assessments. I'm talking about the federal government, not just the Nuclear Regulatory Commission -- target assessments to decide what additional measures need to be taken.

We're in contact with Homeland Security, we're in contact with the NSC/NSA, National Security Council, National Security Agency, as to what we need to deal with. And we're not alone, it's going to affect a lot of other things as well.

So looking forward as the agency comes out and lays out its recommendations, I will share with you that some of it is not going to be publicly accessible. You don't want us talking about this in public. Some things will be publicly accessible and we will seek stakeholder engagement on those issues and when the opportunity presents itself, do stay aware of it.

Now what is the formal mechanism for the agency releasing information? It's through the Federal Register. The agency did make an attempt to release it. Since we went into lockdown as the government, we decided that there was information that could lead to vulnerabilities that could support unlawful acts that we had to guard against. And because of that, we brought down our website and we are rebuilding it as best we can. It is still www.nrc.gov.

If you go to that, you'll be able to see the best information that we have available. Our ADAMS system is back up, but there is information regarding sites that we are not going to share until we feel comfortable enough that we're sharing the right information.

When we did release the GEIS for public comment, it did go through the Federal Register, but it is a GEIS, it is not all things to all people. It's not going to satisfy every single issue. In some of the issues that you have raised, we've identified what is within scope and what is outside scope. There are different processes involved.

You know, license termination is at the back end of decommissioning. Some of these activities are at the front end of decommissioning. And it's not that we're parsing the issues, but we have a fundamental responsibility to provide the best information available. The GEIS is 13 years old, we have additional information that we can share with the public. We think it's fundamental to share that with the public. It is a living document. This is Supplement 1. There will be a Supplement 2, there will be a Supplement 3. There will be additional information that we gain through the experience that we have to continue to update this information.

Sara, you have the opportunity to participate with us on license renewal. We have a commitment, we have a GEIS for license renewal, we have a commitment every 10 years to revisit that, just to make sure we learn from the experience and we update the information. So we are moving in that direction, we are going to update the information.

Hopefully that brings you back to focusing your opportunity. We've taken your comments already, we look forward to written comments and hopefully this kind of dialogue is what can expand your understanding of the document, focus your issues and we look forward to receiving them certainly before the end of the year.

We hope that that provided sufficient opportunity, we distributed how many, over 300 copies of the GEIS nationwide through our earlier experience with scoping and through the interactions that we've had trying to reach out to those parties that did have an interest, expressed an interest already. We may not have covered everybody, but we're hoping that communication does exist within the public as well to focus issues, target the issues and get us the best information you can share with us.

So hopefully that is useful. I didn't want to take anybody else's thunder away, but this kind of interaction is essential and how we operate in safety space may not be the same as how we operate in environmental space. This is an open process, this is a transparent process.

I don't know if any of you realize but Sara has changed the way we do our environmental documents already. There was an issue that was raised on Hatch between scoping and the draft document, there wasn't a clear path and we have changed not just the document you worked on, which was the Hatch Environmental Impact Statement, but even in this one, Appendix A is the in scope activities that were raised during the scoping period, and from now and hopefully forever more, that's the way we're going to do business. But it's through the public interaction that helps us do our job better.

So with that, thank you.

Ms. Hickey: Okay. Spent fuel is one of those issues where there were parts of the spent fuel issue that we looked at in decommissioning activities and that was removing the fuel from the reactor and putting it into the spent fuel pool. The storage of spent fuel from there on out either in the spent fuel pool or in dry cask storage is one of those activities that's considered outside of scope. And in Appendix D, we talk about where those issues on spent fuel are further addressed.

From our perspective, it's not that they aren't addressed, it's just that we're not addressing them in this GEIS. They are addressed in other documents.

And I guess with that, likewise I will say once again that's also true for the radiological impacts after license termination. Those impacts are addressed in NUREG-1496, I think is the appropriate number. And that's the GEIS for license termination.

What we tried to do in the document is direct the reader where the other areas were addressed. And there are a number of them, but in Appendix D, there's a little more discussion about that. Okay?

Ms. Hickey: Okay. I think the thing to do is discuss that right now. Because the radiological impacts are discussed elsewhere, we've chosen to say they are out of scope. However, the non-radiological impacts after decommissioning are not addressed in other NRC documents, and therefore, that's why we've addressed those in our document. We say they are in scope.

I like to think that in fact what we've tried to do is look at this process holistically. I think somebody used that term. We couldn't put everything in the supplement, it would have been too large and too difficult to handle. But what we've tried to do is tell the reader where to go to find the other information.

And hopefully with your comments, if that's -- if we weren't totally successful in that from your comments, we can go back and take another stab at that.

But that's why we've addressed non-radiological impacts in this document, following license termination, but not the radiological impacts.

Okay, now let me talk a bit about the small, moderate and large. And since you were specifically interested in some of the aquatic impacts, I'm going to put Duane on the line here. I'd like you, Duane, if you could just explain the evaluation and the conclusions from the aquatic analysis and the fact that we've said that those impacts are small, and what that means.

Mr. Neitzel: I need that definition.

Mr. Cameron: And I would just note while Duane is coming up that in reference to where Sara was starting from in terms of the fishermen, for example, that the fact that an impact is said to be small doesn't mean that it's not an important issue, an important resource to be looked at. And I don't know if there's any confusion about that or not.

Ms. Hickey: Oh, okay.

Mr. Neitzel: When we were doing the impact stuff and going through those matrices, I was responsible for focusing on the aquatic stuff. As a team, we kept looking back to this level of significance that's listed here in the executive summary and then it occurs again, it's on page xiii in the executive summary.

And that's what we kept coming back to, small being not detectable or so minor that it won't destabilize or noticeably alter the attribute or the resource that we were dealing with. Moderate, sufficient to alter but not destabilize. And large, clearly noticeable and are sufficiently large and could alter the system -- so we looking at those. Again, whether it was aquatic, terrestrial, but in those terms -- detectable -- or not detectable, detectable but not going to destabilize the situation, or clearly detectable and could cause some alterations.

So that was our guidance and then when we looked at issues and subissues like in aquatic, we looked at fish, plants, the community -- you know, all these issues. And are the activities that are within the scope -- and then we went back to the definition of generic, which is also in here, that the impacts -- again, this starts on, in the executive summary on page 8 of the executive summary. Has the issue been determined to apply to all plants or some plants of specific -- we've got examples here -- specific size, specific location.

I remember on location, we were dealing with fresh water versus marine, riverine versus lake. So specific location. For specific type of cooling system or site characteristics and then looking now does this type of impact to fishery apply to all sites, or do we have to lump them in marine or freshwater.

Then we described, we looked at these criteria for small, moderate and large, and assigned that. And those are in these matrices that are in the appendix, on how we stepped through that matrix each time, each time going back and looking at these definitions. That's what we dealt with and we're hoping we communicated to all the readers. And then, you know, what does it take to mitigate that if there is some associated impact.

So it was stepping through the matrices that are in here by those definitions. And I think one of the things that we talked about a lot on Eva's team and we talked with NRC on this, on making these statements, is the generic, we were not asked to preclude an assessment of an impact at a later date.

Generic was at this point in time with this information to say here are the impacts that are going to require site-specific information, you know, as this process proceeds. And one of the important things that we keep hammering ourself with, NRC keeps saying is there's always new and significant information that can arise and working for NRC, it's our responsibility. NRC has it, I know they look for it, the licensees do. We get stuff from the public also. You know, new and significant information means a new assessment.

So don't take -- or at least this is the way I've been taught in working this -- don't take generic as it's off the table, take generic as, you know, we've lumped these together so you can focus on what we think at this time is important and then look for new and significant information so we can come back to these that are new and significant. But these definitions were really important to following that. And I think if you apply that -- no disruption, you can apply that to terrestrial plants, to a fish community, a mussel community -- all these other issues.

Ms. Hickey: So in fact when we say that to the aquatic ecology, the impact is small and generic, what we're saying is for all the decommissioning activities and the evaluation that we did, that we didn't see any disturbance in --

Mr. Neitzel: Detectable, nothing detectable.

Ms. Hickey: Detectable disturbance to the aquatic ecology.

Mr. Neitzel: And that's based on information we got from the public, it's based on the review of literature, it's based on our visiting power plants that were being -- were in the process of decommissioning. The -- what do you call it -- history or the experience -- you had a specific phrase, what we've learned so far, what we're learning as we go along. And then the open literature, technical reports and published documents.

And so what we're saying is based on all that information, we don't see where the activities inside the operating fence for aquatic communities will even be detectable, they're so small that you won't even see them, they're small, they're going to be the same everywhere and that's the statement we've -- that was the conclusion we came up with. That's how we did that.

Mr. Lewis: Steve Lewis, General Counsel's Office, NRC.

One thing I wanted to say is that a number of comments that I heard which were to the effect that we ought to include more on the costs of decommissioning in this GEIS, was something that struck me as a very, very thoughtful comment and I'm accordingly, thinking about them, which means I don't have a response to them right now, but I thought they were good points.

The -- as far as bankruptcy goes, this is obviously a point of considerable concern to the federal government and fortunately the Department of Justice agrees with us that there's a good deal of case law that we have on our side to the effect that these funds are not part of the assets of the estate that are available to be invaded, if you will, or used by other creditors. They're treated as outside the estate for that purpose. They are considered to be governmental in nature and they also partake of a protection that is related to their health and safety and environmental protection function.

Having said that, bankruptcies are very contentious proceedings and so we don't just rest on the fact that we have cases that say what we think will protect us. We go to the Department of Justice and we get the Department of Justice attorneys to represent us and vigorously make sure that those cases are accepted by the bankruptcy judge and that the monies in those trust funds are preserved for the purpose that was established.

That's really all I had to say unless there was some aspect of this that I missed.

Mr. Cameron: No. I think that what you're -- in case it isn't clear, but that the decommissioning fund is not going to be affected by bankruptcy because the fund is there and the creditors of that corporation can't get at that fund. It's preserved. So I think you've done it, Steve.

Mr. Lewis: That's correct.

Mr. Cameron: Thank you very much.

This is, is the fund tied to operation. Is that what you're going to talk about? Who knows what you're going to talk about.

(Laughter.)

Mr. Masnik: Rather than try to interpret your understanding of his question, I'll just respond directly to hers. She had a couple of comments. One had to do with periodically updating the fund, which periodically it is updated, and the staff does an assessment of burial costs which change over time, and licensees then adjust their amount of money that they put aside. That was the question.

AT-G-7 Ms. Carroll: And the other is, isn't this fund built through rates, so what happens if it goes off line or even if the company is no longer billing. There seems to be a couple of vulnerabilities.

Mr. Masnik: Yeah, the requirement of the regulations is to put the fund aside. It doesn't really specify how the licensee gets the money. Licensees of course hope that they can pass that cost on to the ratepayers but if the PUC, for example, doesn't approve it, the licensee has to put in the funds out of their own profits.

You mentioned also that you were concerned about premature shutdowns and we've actually had a number of plants -- the regulation to establish a decommissioning trust fund came into being in 1988. We had a number of plants shut down in the late '80s and early '90s and obviously the fund was not fully funded.

In those cases, the licensee has continued to collect funds and contribute to their decommissioning trust fund. And what they have done, of course, is model their decommissioning activities around the availability of funds. If they still have 60 years to do it, in some cases the licensee would either put the plant in long term storage for a couple of years or they would pace the decommissioning activities to match the funds.

In one case, in Trojan, there was a period of time where they actually exceeded the amount of funds that they -- or they speculated that they would exceed the amount of funds in their trust fund, in which case they went out and borrowed money to continue the decommissioning.

So the bottom line is that licensees have been very creative about obtaining the money and continuing the decommissioning process. We were very concerned about these plants, particularly the premature shutdowns, whether or not they would be able to accumulate the funds. It appears that so far everything has been going along reasonably well.

Mr. Genoa: Thank you, Chip. Paul Genoa, Nuclear Energy Institute.

AT-E-2 It was Ed Martin who asked the question about sort of the discrepancy or the debate between the EPA and the NRC standard for site cleanup or license termination and I think that has been an obstacle to public understanding and acceptance of decommissioning. While it's not unexpected, if you gave two different regulators authority over the same activity that they might develop different approaches towards regulating that activity -- and in fact that is the case.

They did develop different approaches, but when one looks into it and if one really goes in depth into looking at it -- and of course, these are technical issues and we all like to sort of come up with a quick sound bite like answer and unfortunately they don't always lend themselves to that, the reality is, as was noted in a GAO report on the EPA and NRC standard, that the results actually are very similar, of the two approaches, that they both protect public health and safety.

Now one would think that 15 millirem on average per year versus 25 millirem on average per year -- that one would look at that and say well obviously 15 is less than 25, therefore, it must be more protective. In fact, one has to look more closely at what the assumptions are. Twenty-five millirem by the NRC is an all pathway analysis that assumes the worst case in any year.

EPA assumes a 30-year average, what is the average exposure over an entire 30-year period. In fact, when you look at light water power reactors that we're talking about here, who typically have cobalt and cesium as the prime isotopes that drive the exposure, you find that the NRC model of 25 millirem for those isotopes which doesn't take into account decay because it's the worst case, generally the first year after license termination -- actually results in a more strict standard than a 15 millirem average over 30 years. In other words, you can leave more radioactivity behind under the EPA standard, by the way it's designed, for light water reactors than you can under the NRC standard.

So that was the point I wanted to make. And the most recent policy issue that you could look to is that recently at the West Valley Project, the EPA found that the NRC standard of 25 millirem was acceptable and was protective of public health and safety at that site. It met EPA's criteria.

Mr. Cameron: Thank you very much, thank you, Paul.

Janet, do you want to give us one comment before we adjourn for tonight?

AT-B-19 Ms. Zeller: I guess I'd like to just comment that to the public and to many non-profit organizations, generic means you may say this, you may not say that; this is on the table, that is not on the table. And what happens is that people do make comments that affect their communities and affect their safety and if they are indeed outside the scope of a particular process, I would truly love to believe that those comments are not lost. But at this point, my experience doesn't lead me to be sure that that's the case.

AT-B-20 So I'm challenging NRC staff, all of you I believe are genuine in your concern about our welfare, and I would challenge you not to lose any of the comments that have been made about security or any other issue that you consider outside the scope. And make certain that those do surface somewhere.

AT-B-21 I'd also like to point out that what happens in the real world is different from your idealistic presentations and your idealistic views of what ought to be happening. And we have such things as the nuclear waste train carrying Yankee Rowe waste coming into the town of Roanoke at 9:00 on a Friday evening with a street festival going on and you know where the railroad track goes in Roanoke, it comes right into downtown.

And all of the highways were blocked off for the festival, there were thousands of people there, having come into the county for this festival. And that train sat there for hours. And if they were really only emitting 10 millirem per hour at six feet -- and believe me, people were closer than six feet, a bunch of them ran up to it, although our people who were there tried to stop them and get the crowd to move away from the train. There was nobody there who was doing that function except us.

And so, you know, in the real world, what -- the decisions that you make come down to people's communities and so I don't need to preach at you -- well, yeah, I do. You've got to do better, you've got to make assumptions that are way more conservative than what you're doing. And you've got to assume human failings.

AT-B-22 And so much of what is in this document depends on the skills and the experience level, which are lacking, because decommissioning is new, just like plutonium fuel is new. NRC does not know what it's doing, the people who are on these reactor sites don't know what they're doing and so if safety depends on human capability, it does too much by the way in this document, then you know, that's not very reassuring and I'm glad I've got the last word.

(Laughter.)

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SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

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Manager of Nuclear
Oversight and Regulatory Affairs

December 27, 2001

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Division of Administrative Services, Mail Stop T6 D59
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: **"Notice of Availability of the Draft Supplement to the Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities and Notice of Public Meetings," 66 Federal Register No. 218, page 56721 (November 9, 2001)**

Gentlemen:

In the subject Federal Register Notice, the U S. Nuclear Regulatory Commission (NRC) solicited comments on the draft supplement to the Generic Environmental Impact Statement (GEIS) on Decommissioning of Nuclear Facilities as issued in October, 2001

For the past thirteen years, the original GEIS on Decommissioning of Nuclear Facilities, NUREG-0586, has provided a comprehensive and robust evaluation of the environmental impacts associated with decommissioning of nuclear facilities. Nevertheless, we support
CL-01/1 the NRC's current efforts to update the GEIS for nuclear power plants to reflect the industry's experience in decommissioning and to more fully consider issues like partial site release and re-use of concrete rubble as fill

The draft supplement provides a detailed discussion of the impacts of decommissioning on eighteen environmental issues. Overall, the conclusions provided in the draft supplement seem reasonable There are, however, some issues that would benefit from additional clarification by the NRC:

CL-01/2 1. **The time frame for assessing the magnitude of the environmental impacts is not clearly discussed.** In some instances (terrestrial ecology page 4-20, lines 39-41), the draft acknowledges that some impacts will be temporary but once decommissioning is completed, not significant The discussion of other issues is silent with regards to when the impact is assessed For example, dewatering for a relatively short period while sub-surface foundations are removed would be performed in accordance with a National Pollutant Discharge Elimination System (NPDES) permit (section 4 3 2).

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However, the impact on the water table during this period of decommissioning would probably be noticeable. Once dewatering has ceased, the water table would most likely return to its pre-decommissioning level. The licensee would reasonably conclude that dewatering during decommissioning is a SMALL (not noticeable, does not de-stabilize any important attribute of the resource) impact once decommissioning has been completed and is addressed in this GEIS Supplement. The NRC should revise the GEIS Supplement to clarify that the magnitude of the impact should be assessed once decommissioning activities have ceased and the license is terminated

CL-01/3 2. **Activities that require State or local permits or approval should be considered to have a SMALL impact under the GEIS.** Licensees will be required to obtain approval from State and/or local agencies for several activities performed as part of decommissioning and site restoration These activities may include routine discharge of non-radiological liquids, dewatering, removal or modification of circulating water conduits, and use of portable combustion engines. Typically, the regulations governing approval for these activities require that the regulatory agency perform an assessment of the environmental impact(s) and, as appropriate, establish mitigating measures as permit conditions In the case of water quality issues, the NRC relies on the licensee's compliance with the NPDES permit to conclude that the magnitude of the impact(s) is SMALL. The NRC should revise the GEIS Supplement to clarify that the NRC will consider the impact of an activity to be SMALL and rely on the licensee's compliance with a state or local permit, including any mitigating conditions

CL-01/4 3. **The water quality (section 4.3.3) discussion does not address the potential impact of dewatering on the quality of ground water.** If, for example, the ground water is a source of potable water and the facility is located near an ocean, dewatering could impact the quality (salinity) of the potable water. The NRC should revise the GEIS Supplement to clarify that the NRC will rely on the licensee's compliance with the NPDES permit for dewatering to conclude that the impact is SMALL

CL-01/5 4. **The potential impacts of removing circulating water conduits on water quality or aquatic ecology are not consistently discussed or are considered an exception from the staff's conclusions.** The Executive Summary states that the "removal of uncontaminated SSCs (such as the intake structure or cooling towers) that were required for the operation of the reactor" are included in the scope of the GEIS. However, chapter 4 does not discuss the potential impacts of removing circulating water conduits on water quality (section 4.3 3) and the staff considers removal of these structures to be an exception to the generic evaluation for aquatic ecology (section 4 3 5) Similarly, the tables in Appendix H do not address this issue. Realistically, the licensee will have to comply with state and/or local regulations to

remove the circulating water conduits or cooling towers The state and/or local agency would perform an environmental assessment and, as appropriate, establish conditions in the permit to mitigate any environmental impact(s). As in the case of water quality issues, the NRC relies on the licensee's compliance with the NPDES permit to conclude that the magnitude of the impact(s) is SMALL. The NRC should revise the GEIS Supplement to clarify that the NRC will rely on the environmental assessment performed for and any mitigating conditions included as part of the state or local permit for removal of circulating water conduits.

CL-01/6 5. **Facilities included in the NRC's review of information during preparation of the draft supplement should be able to use the NRC's conclusions on socioeconomic impacts instead of performing an additional assessment along with a license-amendment request.** In section 4.3.13, the results of the evaluation stated (page 4-56, lines 30-32) that "In the 21 decommissioning case studies observed, it is concluded that facility decommissioning should have a SMALL socioeconomic impact on low-income and minority populations". At the same time, given that populations differ near each reactor site, the staff concluded that environmental justice was a site-specific issue. The NRC should revise the GEIS Supplement to clarify that licensee of a plant that was one of the case studies can refer to the staff's assessment that this was a SMALL impact instead of having to perform a site-specific evaluation and submit a license amendment request.

CL-01/7 6. **Public opposition to a facility is not an objective criterion for determining the impact of decommissioning on aesthetics.** In section 4 3.15 2, the magnitude of potential impacts on aesthetics is described as proportional to how vigorously the plant is opposed by the host community. Opposition to a facility is frequently expressed by a few vocal individuals or groups who do not necessarily reside in the area but who are philosophically opposed to the peaceful use of nuclear power. These individuals will continue to speak in opposition against a facility as a matter of principle, even when the facility begins decommissioning and site restoration Since aesthetic issues are a function of each individual's perception, opposition to the facility should not be used as a criterion for assessing environmental impact A more objective and justifiable approach would be to apply the other criteria described in this section (the facility's impact on the skyline, noise, land disturbance, traffic) or to consider recreational use, if any, in determining the magnitude of decommissioning impacts

CL-01/8 In a related issue, there continues to be a gap in regulations concerning the release of slightly contaminated solid materials. In both partial site release without a license termination plan and license termination for the entire site, residual radioactivity may

remain as long as the exposure criterion of 10 CFR 20 Subpart E is satisfied. Conversely, this same residual radioactivity is treated as licensed material prior to license termination — regardless of how little the amount, concentration, or dose significance — and can only be disposed of at a licensed facility. This double standard poses an incentive to retain radioactive material on-site until the license has been terminated to avoid potentially excessive costs for radwaste disposal, while creating a longer term risk for additional site cleanup required by other regulatory authority or court of law. While we recognize that the US Nuclear Regulatory Commission (NRC) is seeking to resolve this discrepancy through study by the National Academy of Sciences and further agency deliberation, this process may take several years. Prolonged delay contributes to the erosion in public understanding and confidence in government policy as well as the lack of resolution mentioned above for licensees. Public policy is needed to define the quantitative dose and radionuclide characteristics that have no discernible public health consequences.

Southern California Edison appreciates the opportunity to comment on the draft supplement. If you have any questions concerning these comments, please contact me.

Sincerely,

RC Clark for

A.E. Scherer

11/9/01
66 FR 56721
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December 28, 2001

BEFORE THE

UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE of NUCLEAR REACTOR REGULATION
Washington, D.C. 20555-0111

THREE MILE ISLAND ALERT &
The EFMR MONITORING GROUP's
COMMENTS on the NUCLEAR REGULATORY COMMISSION's
GENERIC ENVIRONMENTAL IMPACT STATEMENT on
DECOMMISSIONING of NUCLEAR FACILITIES, NUREG-0586:
DRAFT SUPPLEMENT DEALING WITH
DECOMMISSIONING of NUCLEAR POWER REACTORS

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December 28 , 2001

Mr. Michael T. Leaser, Chief,
Rules and Records Branch
Division of Administrative Services
Office of Administration
Rules of Directives Branch
Mail Stop T 6 D 59
United States Nuclear Regulatory Commission
Washington, D C. 20555-0001

Dear Mr. Leaser:

Enclosed please find Three Mile Island Alert's (TMIA) and the EFMR Monitoring Group's (EFMR) Comments on the **NUCLEAR REGULATORY COMMISSION's GENERIC ENVIRONMENTAL IMPACT STATEMENT on DECOMMISSIONING of NUCLEAR FACILITIES; NUREG-0586: DRAFT SUPPLEMENT DEALING WITH DECOMMISSIONING of NUCLEAR POWER REACTORS**

The comments were prepared by Eric Joseph Epstein, on behalf of behalf of Three Mile Island Alert and the EFMR Monitoring Group Mr. Epstein is Chairman of TMIA and the Coordinator EFMR. (*See Enclosure I*). Since 1985, Mr. Epstein has testified and intervened in hearings and proceedings before the Nuclear Regulatory Commission (NRC) and Pennsylvania Public Utility Commission (Pa PUC) on nuclear decommissioning and radioactive waste isolation issues (*See Enclosure II*). Mr. Epstein's research and testimony have focused on the following nuclear generating stations. Peach Bottom 1, 2 & 3, the Susquehanna Steam Electric Station (SSES) 1 & 2, and Three Mile Island (TMI) 1 & 2. Since 1993, EFMR, along with General Public Utilities Nuclear (GPU) and Exelon have sponsored and invested $1,590,000 in remote robotics research relating to nuclear decommissioning (*See Enclosure III*).

Respectfully submitted,

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DATED: December 28, 2001

NOTARY

NOTARIAL SEAL
Donna L. Zumbo, Notary Public
City of Harrisburg, Dauphin County
My Commission Expires October 25, 2003

State of Pennsylvania
County of Dauphin
Sworn and subscribed before me this
28 day of DECEMBER 20 01

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I. INTRODUCTION

CL-02/1 Three Mile Island Alert (TMIA) and the EFMR Monitoring Group (EFMR) do not dispute the contention of "electric utilities" (1) and the Nuclear Regulatory Commission (NRC) that radiological decommissioning and radioactive waste isolation expenses are

CL-02/2 subject to change and likely to increase. However, the Nuclear Regulatory Commission has

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1 The NRC promulgated revised rule making for decommissioning nuclear power plants, including an amendment to its regulations.

"...on financial assurance requirements for the decommissioning of nuclear power plants. The proposed amendments are in response to the potential deregulation of the power generating industry and respond to questions on whether current NRC regulations concerning decommissioning funds and their financial mechanisms will need to be modified The proposed action would require power reactor licensees to report periodically on the status of their decommissioning funds and on the changes in their external trust agreements (Federal Register, Financial Assurance Requirements for Decommissioning Nuclear Power Reactors, 10 CFR Part 50, RIN 3150-AF 41, September 10, 1997, (Volume 62, Number 175, pp. 47588-47606.)

In fact, the Commission specifically addressed the particular condition of nuclear utilities under the jurisdiction of regulatory authority:

"...the NRC is proposing to revise its definition of "electric utility" to introduce additional flexibility to address potential impacts of electric industry deregulation. The Commission notes that the key component of the revised definition is a licensee's rates being established either through cost-of-service mechanism or through other non-bypassable charge mechanisms, such as wire charges, non-bypassable customer fees, including securitization or exit fees, by a rate-regulating authority.. Should a licensee be under the jurisdiction of a rate-regulating authority for only a portion of the licensee's cost of operation, covering only a corresponding portion of the decommissioning costs that are recoverable by rates set by a rate-regulating authority, the licensee will be considered an "electric utility" only for part of the Commission's regulations to which those portions of costs pertain. (Pages 47593- 47594.)

Clearly, the NRC has anticipated the nuclear industry's financial apprehension, and acted accordingly by promulgating regulations to resolve the industry's concerns Furthermore, the Commission extended the definition of an "electric utility" to include

"An entity whose rates are established by a regulatory authority by mechanisms that cover only a portion of the costs collected in manner Public utility districts, municipalities, rural electric cooperatives and Sate and Federal agencies, including associations of any of the foregoing, that establish their own rates are included within the meaning of "electric utility." (Section 50.2, Definitions, p. 47605)

steadfastly refused to address the fundamental problem that has created and perpetrated financial gaps between "target" (2) decommissioning funding and actual assets on hand to complete radiological decommissioning (3). In fact, the Commission has no statutory authority to compel "electric utilities" to physically raise, maintain, secure and account for radiological decommissioning funding The NRC can authorize and mandate a preferred "mode of decommissioning", but the Commission lacks the ability to ensure the existence of adequate funding levels, i e , accretible external sinking funds

The NRC's GENERIC ENVIRONMENTAL IMPACT STATEMENT (GEIS) on DECOMMISSIONING of NUCLEAR FACILITIES-NUREG-0586: DRAFT SUPPLEMENT DEALING WITH DECOMMISSIONING of NUCLEAR POWER REACTORS does not adequately factor the financial disconnect between NRC "funding targets" and actual and realized funding pools accrued by "electric utilities". Moreover, there

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2 By the NRC's own admission, a "funding target" is below the actual amount an "electric utility" will actually need to complete radiological decommissioning

Prior to deregulation, and in states not affected by deregulation, "Electric utilities" must petition state utility commissions to recover "targeted" funding levels "suggested" by the NRC. But the Companies are not mandated by the Commission submit detailed funding plans until two years prior to site closure. In addition, if a utility has been saving for DECON, but SAFSTOR is necessitated, the funding package becomes grossly inadequate.

3 The amount of monies necessary to complete non-radiological decommissioning fluctuates from plan to plant, and in many cases "electric utilities" are not saving the eventuality.

remains a chronic shortfall between "targeted" funding levels and actual costs for nuclear decommissioning. (4)

CL-02/3 In addition to the economic gash in the GEIS portal, this fatally flawed document does not adequately address, acknowledge, account for, or compute a number of significant barriers related to radiological decommissioning; including: Cost Estimates for Radiological

CL-02/4-10 Decommissioning; Planned Operating Life of a Nuclear Generating Stations; Spent Fuel Isolation; "Low Level" Radioactive Waste Isolation; Rate payer Equity; Plant Valuation, Joint Ownership; and, Regulatory Ambiguity.

TMIA and EFMR's comments also include: III. SUMMARY; IV. THE PROBLEM with NEPA & "PSYCH STRESS"; V: CRITICISMS & SUGGESTIONS of 4.0 ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; VI. APPENDIX J: INCORRECT or MISSING DATA; and, VIII. TRANSPORTATION.

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4 WASHINGTON, Dec 20, 2001 (Reuters) - The Nuclear Regulatory Commission falls short in its oversight of funds for U S. nuclear power plant decommissioning, according to a report released on Thursday by Congress' main investigative arm.

Decommissioning a retired nuclear plant typically costs between $300 million and $400 million, and involves dismantling it and removing its radioactive components for safe storage.

The General Accounting Office report said that in some instances, the NRC's reviews were "not always rigorous enough" to ensure adequate decommissioning funds, according to the report

"The commission will review the report carefully and take whatever action they feel is appropriate," an NRC spokesman said. The agency oversees all 103 U.S. nuclear plants.

CL-02/11 The Nuclear Regulatory Commission can no longer evade its responsibilities and duties without considering the practical consequences, financial limitations, and political

CL-02/12 realities. Does any one of sound mind or body residing within the Commission really think that a nuclear power plant can be radiologically decommissioned if the funding is inadequate

CL-02/13 and the plant is prematurely shut down? Can the Commission identify a pragmatist, physicist, chemist, policy analyst, or behavioral scientist who is willing to testify that radiological decommissioning can be achieved with the fate of Yucca Mountain in perpetual limbo and the three, current "low-level" radioactive waste facilities limited by finite capacity

CL-02/14 and geopolitical considerations? Did the Nuclear Regulatory Commission "encourage" its economists, accounts, and actuaries to ignore the impact of deregulation and plant devaluations on local communities? Is it unreasonable to ask the NRC to view decommissioning through a global lens that accounts for economic reality, objective science, and fiduciary accountability? Or is the Commission intent on viewing radiological decommissioning through surrealistic prescription monocles prescribed by the Nuclear Energy Institute, the Edison Electric Institute, Electric Power Research Institute, and the Institute for Nuclear Power Operations?

CL-02/15 **The NRC, once again, has missed an opportunity to constructively participate in solving the nuclear decommissioning riddle. Radiological decommissioning requires inter-agency cooperation among federal, state, and**

CL-02/16 **local shareholders. At some point, the NRC will have to create a decommissioning vessel the incorporates reality as its guide. Frankly, the GEIS resembles a script for "Abbott and Costello" prepared by Norman C. Rasmussen, Bernie Snyder and Ken Lay.**

II. BARRIERS TO NUCLEAR DECOMMISSIONING:

A. Current Problems Associated with Cost Estimates for Radiological Decommissioning

CL-02/17 Power reactor licensees continue to rely heavily on nuclear decommissioning projections provided by the industry consultant, Thomas LaGuardia and TLG , Inc. Furthermore, TLG continues to base decommissioning estimates on flawed and specious "field" studies extrapolated from small, minimally contaminated, and prematurely shutdown nuclear reactors

P-81 No reasonable, sound or prudent financial officer operating outside of the nuclear industry would accept funding formulas and that rely on so many fluid caveats and assumptions. Recently, David Hayward, president of Hayward Consulting stated:

> In my judgment, AmerGen Energy Co.'s strategy to purchase and operate nuclear power plants does not make a lot of sense for the following reasons First, from a historical perspective, many nuclear power plants have closed down prior to the expiration of their licenses Thus, their financial performance has been lower than that originally anticipated **Second, nuclear plant owners have historically underestimated the cost of decommissioning nuclear power plants (Bold face type added)** Third, the issue of disposing nuclear waste has not been fully settled. ("Plant Valuation: Book Value and Beyond", *Public Utilities Fortnightly*, September 1, 1999, p. 58.)

The wild fluctuation in the cost estimates for radiological decommissioning are attributable to the lack of actual decommissioning experience at large nuclear generating stations (over 1,000 MWe, or at plants that have operated for their full and planned lifespan. (See Discussion B. **Planned Operating Life of Nuclear Generating Stations**) The largest commercial nuclear power plant to be fully decommissioned, Shippingport, is a 72 megawatt (MWe) light-water breeder reactor and is substantially smaller than the Susquehanna Steam Electric Station-1 & 2 (1,050 Net MWe for each unit) (5) During Pennsylvania Power & Light's Base Rate Case ("PP&L" or "PPL") (*PA PUC v. PP&L*, 1995; Docket No R-00943271; R-00943271COO1, *et seq*). Company witness Thomas LaGuardia, President of TLG, admitted that Shippingport was "almost like a pilot plant." (1995 PP&L Base Rate Proceeding; Official Transcript, Page 2103, Lines 17-20) (6) Shippingport was owned and operated by Duquesne Light Company under special agreement with the Department of Energy. The entire core was removed and replaced three times prior to decommissioning, and as noted by Company witness LaGuardia during cross examination, "[T]here were several cores at Shippingport starting out as a

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5 PPL announced it would petition the NRC to increase the capacity of SESS by 100 megawatts, while decreasing the property value of the plant "The 120 million of improvements at the Susquehanna plant are expected to add to earnings as soon as they go into operation" (*Reuters*, April 23, 2001.

On July 17, 2001, he NRC approved PPL's capacity expansion request. Unit 1 will be increased this month while the upgrade at Unit 2 is planned for Spring, 20002, after the planned refueling outage.

6 This methodology was reconfirmed in 1997:

> The cost estimating methodology employed in developing the decommissioning estimates, have been field verified by the Company's decommissioning consultant [TLG] in work performed during the decontamination and dismantling of the Shippingport Atomic Power station, Shoreham Nuclear Station and Pathfinder Atomic Station as well as for activities ongoing at the Yankee Rowe, Trojan and Rancho Seco nuclear units (Question & Answer 155, PP&L's Response to Interrogatories of Environmentalists, Set 3, Dated May 19, 1997.)

pressurized water reactor and later being converted to a light water reactor." (1995 PP&L Base Rate Proceeding; Page 2105, Lines 19-21). Furthermore, the reactor vessel was shipped to the Hanford Reservation (through an exclusive and unique agreement with the Department of Energy) thus depriving the industry of critical hands-on decommissioning experience. In fact, Shippingport was dismantled and not decommissioned. The immense differences between Shippingport and the large, commercial nuclear generating stations make any financial comparison between inadequate and baseless.

Several other nuclear reactors are being prepared for decommissioning but provide little meaningful decommissioning experience that could be used reliably to predict decommissioning costs.

For instance, Yankee Rowe was cited during the 1995 PP&L Base Rate Case as a reliable predictor of the decommissioning cost estimates associated with a large commercial reactor. Yankee Rowe, however, is a small commercial plant (167 MWe) that had a unique advantage which make it an unlikely predictor of decommissioning costs at other nuclear plants: The most significant component removal, steam generators, was completed without Nuclear Regulatory Commission approval. PP&L's witness, Thomas LaGuardia, admitted, "[t]hat's correct, at the time. They [Maine Yankee Atomic Power Company] didn't have the decommissioning plan approved at that time." (PP&L Base Rate Case, Page 2095, Lines 17-18.) Moreover, this plant is only in the initial phase of decommissioning and costs have already mushroomed from $247 to $370 million from 1993 to 1995 primarily for spent fuel management costs. (PP&L witness, Thomas LaGuardia, confirmed the figures on Page 1029, Lines 16-22)

Shoreham, a large Boiling Water Reactor (809 MWe), was decommissioned after two full power days of operation or 1/7,300 of the "expected" operating life of the SSES. Therefore, Shoreham is also an unpredictable and unreliable indicator of future decommissioning costs at the Susquehanna Steam Electric Station

The Nuclear Regulatory Commission and "electric utilities" rely heavily on TLG, to construct decommissioning cost estimates based on work completed at Shippingport, Shoreham, Yankee Rowe and small, prototype reactors such as: BONUS (17 MWe) placed in ENTOMBMENT; Elk River (20 MWe) a reactor approximately 2% of Susquehanna's size which operated for five years; and, Pathfinder (60 MWe), which operated for 283 full power days (PP&L Base Rate Case, LaGuardia, Page 1044, Line 1) before being placed in SAFSTOR in 1989.)

TLG's are specious and depend on: 1) The development of nonexistent technologies; 2) Anticipated projected cost of radioactive disposal, and, 3) The assumption that costs for decommissioning small and short lived reactors can be accurately extrapolated to apply to large commercial reactors operating for forty years.

In Response to Interrogatories of the Environmentalists, Set 3, Dated May 19, 1997, PP&L stated: "However, at this time, the Company cannot predict future changes in decommissioning technology, decommissioning costs or nuclear regulatory requirements Accordingly, the Company cannot anticipate future decommissioning cost requirements or the associated rate recovery levels." (Q. & A., 157.)

At the Susquehanna Steam Electric Station, projected costs for decommissioning have **increased by at least 553%** in the last 19 years. In 1981, PP&L engineer Alvin Weinstein predicted that PP&L's share to decommission SSES would fall between $135 and $191 million By 1985, the cost estimate had escalated to $285 million, and by 1991 the cost in 1988 dollars for the "radioactive portion" of decommissioning was $350 million.

The Company then contracted out for a site-specific study which projected that the cost of immediate decommissioning [DECON] would be $725 million in 1993 dollars. The 1994 cost estimate remained steady at $724 million, but the market value of securities held and accrued in income in the trust funds declined, and thus the estimate reflected another increase in decommissioning costs. (7) (PP&L Base Rate Case, Page, 1016, Lines 7-27 and Page 1017, Lines 1-24.)

7 "PP&L has not performed an analysis which compares the PP&L estimate of $4.6 billion to $5 6 billion in stranded costs to the $3.1 billion estimate prepared by Resource Data International/POWERdata reported on page 12 of the May 1997 edition of Public Utilities Fortnightly." (PP&L's Response to Interrogatories of the Office of Small Business Advocate, Set I, Dated May 22, 1997, Q. & A. 38.)

However, three days earlier, the Environmentalists asked PP&L (Q. & A. 156 b.): "Is the Company aware of any such [decommissioning] studies conducted by others? Please identify and provide each such study conducted by others and in the Company's possession or control."

"PP&L is unaware of any such studies." (PP&L's Response to Interrogatories of the Environmentalists, Set 3, dated May 19, 1997.)

Furthermore, PP&L has never analyzed or evaluated decommissioning cost discrepancies and predictions offered by separate entities

Q.4 a. "Are you aware that PP&L's decommissioning estimates from 1981 (Alvin Weinstein, $135 to $191 million) through 1995 have increased by 553% when TLG projected nuclear decommissioning costs at $724 million?"

A. 4. a. The S.M. Stoller Company study and the TLG studies were prepared using different assumptions. PP&L has not done any study that would compare or equate the two estimates. (PP&L's Response to Interrogatories of Eric Joseph Epstein, Dated June 3, 1997.)

The industry "leader", Exelon, has filed comments attesting to the imprecise and speculative nature of radiological decommissioning estimates (*See diagram below*). Unfortunately, these figurers (8) are already anachronistic, inaccurate, and grossly underestimate decommissioning since they represent data from studies conducted by TLG (9) from **1995-1996, but *not* filed until January 1, 1998.** Therefore, Exelon is not preparing to revise decommissioning estimates until 2003.

Generating Station(s)	*1995 Study/1995 Study*	*$ Increase/% Increase*
Limerick 1& 2	$272m/$986m	$714m/610%
Peach Bottom 2& 3	$273m/$947m	$674m/724%
Salem 1 & 2	$271m/$701m	$430m/600%
Three Mile Island 1 (a)	$60m(b)/$368m or $431m(b)	$308-$371/-(c)

(a) GPU reported that the cost to decommission TMI-2 more than doubled in 48 months By 1997, the decommissioning estimate had risen 110% in four years to $433 million. (1997, GPU Annual Report.)

(b) TMI-1 total, projected decommissioning expense based on ENTOMB, (1986, GPU Annual Report, p. 39).

(c) TLG's estimate as referenced in the 1998, Annual Report, p 59.

8 **PECO Energy's Response to Eric Epstein's: I-4,** *BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION,* Eric Joseph Epstein's Testimony APPLICATION OF PECO ENERGY COMPANY, PURSUANT TO CHAPTERS 11, 19, 21, 22 AND 26 OF THE PUBLIC UTILITY CODE, FOR APPROVAL OF (1) A PLAN OF CORPORATE RESTRUCTURING, INCLUDING THE CREATION OF A HOLDING COMPANY AND (2) THE MERGER OF THE NEWLY FORMED HOLDING COMPANY AND UNICOM CORPORATION, DATE. Docket No A-110550 F0147, FILED APRIL 17, 2000)

9 All of the above referenced studies were conducted by TLG Industries (TLG) ComEd's net nuclear decommissioning costs have almost doubled from 3,089 million in 1990 to 5,426 million in 1999. (PECO Energy's Response to EE-I-4)

In 1995, ComEd estimated that its decommissioning costs had risen from $2 9 billion to $4 2 billion

However, should Limerick, Oyster Creek, Peach Bottom 2-3, or TMI-1, shut down prematurely, the entire residue of decommissioning funding must necessarily be derived from shareholder and/or Company resources due to the advent of deregulation.

The Company added that, "The original [1985] and current [1995] mode of decommissioning funding is geared toward a DECON method of decommissioning." (PECO's Response to EE-I-4, d) However, since there is no permanent nuclear waste isolation site for spent fuel, SAFSTOR is the most likely decommissioning mode available when PECO's nuclear plants come off-line. (10)

CL-02/18 The GEIS stated, "Based on the number of reactors shut down and the date that they permanently ceased operations, over 200 facility-years' worth of decommissioning experience have accumulated since the 1988 GEIS." (**Executive Summary**, xi). However, based on this statement, and NRC's inability to grasp the "exponential nature" of radiological decommissioning estimates, it appears that the Commission has had the same experience 200 times. Moreover, the GEIS's sophomoric tone in declaring vast decommissioning experience is similar to the NRC's rhetoric at the time of the 1988 GEIS. On May 26, 1988, in Harrisburg, Pennsylvania, the Commission confidently stated they have "considerable experience [decommissioning] with reactors that have not had a significant accident before the end of their useful lives". (NRC, TMI Advisory Panel, May 26, 1988).

10 "A search of ComEd's records reveals that ComEd does not have records of the initial estimates of the indicated decommissioning costs." (PECO's Response to EE-Informal-I-4.)

B. Planned Operating Life of Nuclear Generating Stations

CL-02/19 Experience at large commercial nuclear power plants over 200 MWe has clearly demonstrated that TLG's assumption that nuclear units will operate for 40 years, i.e., "PP&L expects that Susquehanna will operate for its full license life" (11) contradicts existing nuclear reactor experience. The Company's witness, Thomas LaGuardia, was asked by Mr. Epstein: "[H]ow many commercial nuclear power plants in this country have completed their full operating lives?" Mr. LaGuardia replied, "[N]one, essentially." (PP&L Base Rate Case, Page 1023, Lines 20-22.) Additionally, George T. Jones, Vice-President of Nuclear Engineering, was asked by Mr. Epstein:

Q: "In your experience, which is rather extensive at TVA, Entergy and CE, can you at least let me know what is the longest life of a plant you've been associated with?"

A: Mr. Jones, I've never been associated with one that -- none of them have ever reached the end of their licensed life

There has been a lot of work done and continues to be done on life extension, not by us but by the industry. I don't know." (Page 2272, Lines 8-16.)

11 Pennsylvania Power & Light Company, Response to Interrogatories of the Environmentalists, Set 3, Dated May 19 1997, Question and Answer: 167 (Also see, Pennsylvania Power & Light Company, Response to Interrogatories of the Office of Consumer Advocate, Set III, Dated April 17, 1997 and PP&L's Response to Interrogatories of Eric Joseph Epstein, Set I, dated June 3, 1997.)

Additionally, PPL admitted (in the same set of Interrogatory Response of the Environmentalists) that TLG "has not performed, nor is he aware of, any generic studies or studies that address the premature closure of a nuclear unit and the cost of decommissioning under such a scenario " (Q. & A. p. 190)

Moreover, PP&L believes that while the SSES may operate for 40 years, they are not confident that this critical assumption applies to other commercial nuclear power plants

Q 9. "Is the Company aware that if the Susquehanna Steam Electric Station operated for 40 years, it will be retired at the same time as the majority of nuclear reactors in America?"

A. 9. "This question is premised upon an assumption that the majority of other nuclear reactors in America will operate for their full license lives **There is no evidence that this premise is correct.**" (**Boldface type added.**) (PP&L's Response to Interrogatories of Eric Joseph Epstein, Set I, Dated June 3, 1997.)

Even Mr. MacGregor, counsel for PP&L, wavered on Susquehanna's ability to operate for its full-life. Mr. Epstein asked him: "But his [LaGuardia] methodology is based on the fact the plant will operate for 40 years; is that not correct." Mr. MacGregor answered, "I'm not sure that's true." (Page 456, Lines 15-18.)

The Company reconfirmed the 40 year assumption in the 1997 Rate Case. "PP&L expects that Susquehanna will operate for its full license life. Moreover, the Company believes that it can meet 'higher than expected decommissioning costs,' if they arise, and can avoid 'financial difficulties at the responsible entity' by operating its system in a efficient and cost effective manner. The Company has not contemplated additional measures at this time." (Pennsylvania Power & Light Company Response to Interrogatories of the Environmentalists, Set 3, Dated May 19, 1997. Q. & A. 167.) This assertion **contradicts PP&L's direct testimony** about their apprehension and financial vulnerability if the Company is no longer defined as an "electric utility." **(Bold face type added.)**

Mr. LaGuardia's and Mr. Jones's acknowledgments are confirmed by empirical data contained in the GEIS. **(Appendix F & J.)** For example, the following reactors have been shut down prematurely: Shoreham, 809 MWe, operated for two full-power days (which is .000136986% of the estimated life of the Susquehanna Steam Electric Station) and closed before it could begin commercial operation in May 1989; Trojan, 1095 MWe which operated for 40% of its operating life, and completed a unique disposal arrangement with the Hanford Nuclear Reservation (May 1976 to November 1992); Three Mile Island-2, 792 MWe which operated for 1/120 of its operating life (December 1978 to March 1979), Dresden, 200 MWe which operated for 45% of its operating life (July 1960 to October 1978); Indian Point-1, 257 MWe which operated for 30% of its planned operating life (January 1963 to October 1974); San Onofre-1, 436 MWe which operated for 35% of its expected life (from January 1968 to November 1992); and, Fort Saint Vrain, 330 MWe which operated for 27.5% of its expected life (January 1979 to to August 1989) and Big Rock Point a 67 MWe General

Electric BWR which began commercial operation in March 1963 prematurely shut down on August 29, 1997. (World List of Nuclear Power Plants: Operable, Under Construction, or on Order (30 MWe and Over) as of December 31, 1994. "Nuclear News," March, 1995, pp. 38-42.)

On December 4, 1996, Haddam Neck, a 582 MWe Pressurized Water Reactor operated by Connecticut Yankee Atomic Power Company, closed prematurely in the hope of saving rate payers $100 million ("Nuclear Monitor", p. 4, December 1996.) The plant came on-line in January 1968 and operated for 72.5% of its predicted life. Six months later, on May 27, 1997, Main Yankee was shut down and became the first Combustion Engineering reactor to be prematurely retired. The plant, an 860 MWe Pressurized Water Reactor, opened in December 1972 and was scheduled to operate through 2008.

The Connecticut Department of Public Utility Control removed Millstone-1 from the rate base on December 31, 1997. Millstone-1, a 660 MWe General Electric Boiling Water Reactor operated by Northeast Utilities, began operation in March, 1971 before being prematurely retired. More importantly, the decision prevents Northeast Utilities from charging rate payers for costs associated with the shutdown.

And, on January 15, 1998, Commonwealth Edison(ComEd) announced it was permanently shutting down Zion-1 and Zion-2, 1040 MWe Westinghouse PWRs. Zion-1 began commercial operation in December 1973 followed by Zion-2 in September 1974. ComEd also reported this decision will cost shareholders $515 million or $2 38 per share. With the shutdown of Zion, premature closure has occurred for every nuclear reactor type and supplier in the United States of America.

A sense of fair play, intergenerational equity, and risk sharing between rate payers and taxpayers on one hand, and shareholders and Board Members of on the other, necessitate that the Nuclear Regulatory Commission and licensees plan for decommissioning based on the assumption that their nuclear units will be prematurely shut down. As previously noted, operating capacity and historical evidence from commercial nuclear power plants give no valid indication that nuclear generating stations will operate for 40 years. (12) On the contrary, reactor history has resoundingly demonstrated that nuclear power plants have not operated for the term of their license.

CL-02/20 Obviously, there are chronic shortfalls between "targeted" funding levels and actual costs for nuclear decommissioning. The burden of proof rests squarely on the shoulders of power reactor licensees, their partners and the NRC to demonstrate that a 40 year operating life, which they predicate their financial planning upon, is realistic. Furthermore, the nuclear industry has exacerbated this problem by resolutely refusing to put aside adequate funds for non-radiological decontamination and decommissioning

12 In *Re Wolf Creek Nuclear Generating Facility*, 70 PUR 4th 475 (1985), the Kansas State Corporation Commission was confronted with the pudency of the construction of a nuclear generating plant. On the issue of decommissioning, the Commission stated that "Decommissioning cost estimates are inherently uncertain and speculative" and that "[t]o date, there has been no actual experience decommissioning a large, commercial nuclear plant and cost estimates have been traditionally low."

In addition, the Commission held that "The current shortage (indeed nonexistence) of the site for the disposal of large quantities of radioactive waste makes detailed estimates of shipping distance and cost virtually impossible." Id. at 540-41. In the *Wolf Creek* rate case, Mr. LaGuardia (also a Company witness in the 1995 PP&L Base Rate Case) failed to include inflation in his cost estimates and assumed a forty year operating life for the nuclear plant. Id. On the basis of this omission and the speculative predictions of operating life, the Commission chose a "midpoint" of LaGuardia's testimony.

The Commission also declared, **"We believe that the NRC and general industry estimates of 30 years is a valid and realistic life to utilize for purposes of decommissioning estimates"** Id. at 541. **(Bold faced typing added.)** The NRC must adopt and promulgate consist decommissioning mandates, which includes planning for nuclear decommissioning around a thirty (30) planned operating life

C. Spent Fuel Isolation

CL-02/21 Spent fuel "disposal" is an unresolved and hugely problematic area. Each reactor produces approximately 20 to 30 tons of I high-level radioactive waste per year. There is presently, and at least until 2010, nowhere to put this waste. The technology to safely manage spent fuel for an indefinite period of time does not exist. While the manner of spent fuel management may differ, i.e. re-racking and possibly dry cask storage all operating nuclear power plants are forced to store high-level, radioactive waste in the form of spent fuel on-site.

There is no location to permanently store spent fuel and high level radioactive waste (HLW) generated by nuclear power plants. This is significant problem for Exelon Nuclear which operates the largest nuclear fleet in America (13) In fact, many of Exelon's reactors are close to losing Full Core Off load Capability.

Reactor	*Core Size*	*Lose Full Core Off load Capability*
Limerick 1	764	2006
Limerick 2	764	2006
Oyster Creek	560	LOST
Peach Bottom 2	764	2000
Peach Bottom 3	764	2001
Salem 1	183	2012
Salem 2	193	2018
Three Mile Island	177	NA

(Source: PECO Energy's Response to Eric Epstein's, I-12, Unicom Merger Proceedings, PA PUC, 2000)

13 "...PECO Energy Company, each decommissioning cost evaluation presumes a date for a permanent high level radioactive waste (HLRW) facility This allows for a cost comparison with other estimates. The following dates are included as 'presumed' in the cost estimates...Oyster Creek: DOE commences pickup in 2010...TMI: DOE commences pickup in 2010...PBAPS [Peach Bottom Atomic Power station] 2 & 3: DOE commences pickup in 2010, LGS [Limerick Generating Station]: DOE commences pickup in 2010, Salem 1 & 2: DOE commences pick up in 2010." (PECO Energy's Response to EE-I-10)

Exelon's response to the critical shortage in spent fuel capacity has been to gamble, CL-02/23
and increase storage capacity through an untested, commercial dry cask technology

Station	*Dry Cask Technology*	*Deployment Date*	*Contractor*
Limerick	BD	Summer 2010	TBD
Oyster Creek	NUHOMS 52B (c)	July, 2010	None
Peach Bottom	Trans-Nuclear TN-68	June, 2000	Raytheon
Salem (a)	None	TBD	None
TMI (b)	None	TBD	None

(Source: PECO Energy's Responses to EE-I-11 & EE-I-12.)

(a) Salem has no plans to extend spent fuel capacity though dry cask storage or re-racking

(b) TMI-1 plans to increase spent fuel storage capacity by re-racking in 2002.

(c) Holtec is the new vendor chosen to provide dry cask services at Oyster Creek (PECO's Response to Eric Epstein's Informal I-8)

CL-02/22 When, and if, spent fuel storage is increased (14) at the above mentioned facilities, the additional upward 'adjustments" will have a significant impact on decommissioning funding This cost, which was omitted from TLG's estimate, "None of the estimates we have prepared include the cost of disposal of spent nuclear fuel" (1995 PP&L Base Rate Proceeding, Page 1032, Lines 20-12) is the main contributing factor to the escalation of decommissioning costs at Yankee Rowe. Thomas LaGuardia, the Company's witness, admitted the increase during cross examination:

Mr. Epstein: "Are you aware that the cost has increased for the decommissioning of Yankee Rowe from $247 million to $370 million over the last two years?"
Witness: "Yes. I'm aware of what the estimate concludes."

Mr. Epstein. "And half of the cost was attributable to spent fuel storage?"
Witness: "That's correct." (Page 1029, Lines 16-22.)

14 "PECO Energy Company is participating in research projects on spent nuclear fuel (SNF), and Transportation methods for SNF, through EPRI and NEI. The total spending on these projects is in excess of $250,000 per year." (PECO's Response to EE-Informal-I-11).

Aggravating the critical shortage of HLW storage space is the bleak estimate for the completion of Yucca Mountain, the designated repository for high level nuclear waste. The earliest date this repository could be available is 2010. Lynn M. Shishido-Topel served as the Overseeing Commissioner of the Illinois Commerce Commission testified on behalf of the National Association of Regulatory Commissioners before the House Subcommittee on Energy and Mining Resources and the House Committee on Oversight and Investigations (March 17, 1995.) Shishido-Topel recognized **eight years ago** that she was "fairly certain that DOE would not meet its revised 2010 deadline to begin accepting spent fuel from commercial reactors " [Bureau of National Affairs (BNA), "Federal Facilities: Industry, DOE Struggle to Find Acceptable Solution to Interim Storage of Spent Fuel, Daily Environment Report News, March 18, 1994 [1994 DEN 52 d10]. She also predicted that the amount of spent fuel generated by 2000 will be 40,000 metric tons (MTU). This amount of waste would exceed Yucca Mountain's capacity, and the State of Nevada has demonstrated that Yucca Mountain will probably hold about 20% of the total 85,000 MTU of spent fuel earmarked for the facility. (State of Nevada, Nuclear Waste Project Office, Scientific and Technical Concerns, pp 8-11.)

CL-02/24 As early as 1995, concerns about Yucca Mountain's integrity surfaced from scientists at Los Alamos National Laboratories. Dr. Charles Bowman warned that plutonium would remain after the steel casks holding the nuclide dissolved Plutonium could then migrate and concentrate. (*The New York Times*, p 1, March 13, 1995.) And in February 1999, the scientific peer review panel for Yucca Mountain commissioned by the Unites sates Department of Energy (DOE) produced a "highly critical" report. "The review panel said the model [DOE's computer model] has so many uncertainties - like the corrosion rates of waste containers, the area's vulnerability to earthquakes and how climate changes would affect rainfall - that its reliability was limited " (*The New York Times Science*, "New Questions Plague Nuclear Waste Storage Plan," Jon Christensen, August 10, 1999)

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CL-02/25 Furthermore, on October 4, 1999, LeBoeuf, Lamb, Green & MacRae, filed a complaint alleging a conflict of interest by the Department of Energy in their selection and awarding of $16 million legal contract to Winston & Strawn Former general counsel to the Energy Department, R Tenney Johnson, in a sworn affidavit, stated: "[A] situation has been created which an entity [Winston & Strawn] will pass judgment on its own work." (Matthew Wald, *New York Times*, October 5, 1999.)

Exelon's "political strategy" relative to finding a solution for a permanent spent fuel storage facility has been disappointing, and reflects the philosophy of the Nuclear Energy Institute

> The planned fall-back scenario in the event of unavailability of low-level radioactive waste disposal facility would be to continue political pressure on the Sates and US Government to support the development of permanent low-level waste facilities. In the event that a high-level radioactive waste facility is unavailable, the station would continue spent fuel management under "dry storage". Any station without dry storage capability would establish dry spent fuel storage management if its likely that the DOE would not receive spent fuel in a prudent time frame and wet fuel storage is no longer feasible.
> (PECO Energy's Response to EE-I-14)

CL-02/26 Isolation of high-level radioactive waster, which is primarily composed of spent fuel, can not be separated from radiological decommissioning The earliest Yucca Mountain will be available is in the year 2010. Nuclear generating stations can not be decommissioned or decontaminated with the presence of HLW on-site or inside the reactor vessel. Aggressive decontamination process will be precluded, necessitating utilities to place retired reactors into extended-DECON or SAFSTOR. If a long term solution to spent fuel isolation is not found in the immediate future, some of the nation's nuclear generating stations will be shut down prematurely due to an absence of spent fuel storage capacity. **Cost projections**

CL-02/27 **by "electric utilities" must be revised to necessarily include funding scenarios that anticipate premature closure.**

D. Low Level Radioactive Waste Isolation (15)

CL-02/28 TLG provided nuclear waste storage and nuclear decommissioning costs estimates for all Pennsylvania utilities regulated by the Public Utility Commission. However, TLG's testimony during the 1995 PP&L Base Rate Proceeding discredits their projections. Mr. La Guardia based his cost estimates for low-level radioactive waste (LLW) disposal on the assumption that the Appalachian Compact would be available when the SSES closes (PP&L Base Rate Case, Page 1034, 17-20). He concluded that the disposal of LLW is the most expensive component in the decommissioning formula (Page 2091, Lines 21-25.) Furthermore, Mr. LaGuardia conceded that it may be necessary to recompute cost estimates for disposal because it now appears imminent that Barnwell will open for seven

15 This term is imprecise and "low-level" is not analogous to low-risk

The GEIS definition of LLW on M-11 is **misleading** and is symptomatic of problems embedded in **Appendix M: Glossary.**

The overwhelming majority of "low-level" nuclear waste comes from nuclear power plants and includes· irradiated components and piping; control rods, poison curtains, resins, sludge, filters and evaporator bottoms; even the remains of entire nuclear power plants if and when they are decommissioned.

Radioactive medical waste comprises less than .1% of the radioactivity to shipped all "low-level" radioactive waste sites. If you factor academic waste into the formula, 2% of all "low-level" radioactive waste is derived for biomedical sources

The above mentioned figures are national averages derived from the Department of Energy between 1987-1990. What does the"low-level" radioactive waste stream look like in the Appalachian Compact? Of the compact states of West Virginia, Delaware, Maryland and Pennsylvania, the Commonwealth generates approximately 85 % of the radioactive waste or 170,000 cubic per year. The source of radiation is as follows: nuclear power plants· 80%; industry: 12%; medical. 5%, and academic institutions less than 1% However, the amount of radioactivity present in the volume is even more unbalanced: nuclear power plants: 92%; industry 7%; medical .1%; and academic institutions:.07%. The nuclear waste site planned for Pennsylvania is primarily for the use of the nuclear industry

to ten years for all states except North Carolina (Page 2108, Lines 4-9.) However, the Company has not yet taken the step of reconfiguring costs of LLW disposal now that Barnwell has been open since **July 5, 1995. (Bold face type added.)**

Q. 7. "Has TLG or the Company recomputed decommissioning estimates since Barnwell has reopened?"

A. 7. "No." (Pennsylvania Power & Light Company Response to Interrogatories of Eric Joseph Epstein, dated June 3, 1997.)

Barnwell is currently operating and has the capacity to function through 2006 In a response to a formal inquiry posed by Mr. Eric Epstein, Chairman of Three Mile Island Alert, Inc., on May 18, 1996, concerning Barnwell's operating and capacity status, Chem-Nuclear Systems, Incorporated, the owners and operators of the Barnwell, declared:

> Our analysis is based on the insights and understanding that come from having a major operation in South Carolina. The realities are that Chem-Nuclear LLRW disposal facility in Barnwell, S C. has sufficient disposal capacity to remain open to the nation for approximately 10 years based on volume received (Walter E. Newcomb, Ph D., Vice President and Project Manger, CNSI Pennsylvania Office, May 18, 1996.)

CL-02/29 In addition to recomputing the cost of LLW disposal, the reopening of Barnwell has indefinitely postponed the siting of a waste facility in Pennsylvania Marc Tenan, Appalachian Sates LLW Commission executive director observed: "If Barnwell's going to open to the entire country for at least the next 10 years, is there really a pressing need to continue work on regional disposal facilities?" ("ACURIE Newsletter, About Low-Level Radioactive Waste Management," May 1995, Page 1.)

On June 18, 1998, the Appalachian States LLW Commission voted to support the Pennsylvania Department of Environmental Protection's suspension of the siting process for a Low-Level Radioactive Waste Disposal Facility.

CL-02/30 Limerick, Oyster Creek, Peach Bottom, Salem, and Three Mile Island are among the nation's nuclear generating stations currently serving as "temporary" repositories for low-level radioactive waste. Limerick, Peach Bottom, and Three Mile Island do not meet the standards set by the Appalachian Compact in regards to a permanent LLW facility.

> Neither PECO nor ComEd consider its nuclear generating sites to be appropriate for permanent isolation of either low-level or high-level radioactive wastes generated as a result of operations. ComEd will continue to store only radioactive waste generated at each site on a temporary, as-needed basis.
> (PECO Energy's Response to EE-I-13)

E. Rate Payer Equity

CL-02/31 Objective empirical data clearly demonstrate that the majority of commercial nuclear power plants will not operate through their planned operating life of forty years (40) While the power reactor licensees are entitled to recover a portion of decommissioning funding through the rate, they are not entitled to a full and complete rebate on "stranded investments", and shortfalls that will certainly arise do to the underfunding of nuclear decommissioning "funding targets". Shareholders and Board Members of electric utilities and Rural Electric Cooperatives (REC) must assume responsibility for their business decisions. These aforementioned entities aggressively sought to license, construct, and operate nuclear power plants To allow artificial definitions concerning ownership of nuclear generating stations to insulate those who cogently made capital investments is immoral, unethical, and an endorsement of corporate socialism That is, shareholders profit from imprudent investment decisions and are accorded relief when error of mismanagement becomes manifest.

The issue of rate payer equity and the mandated feasibility of shared costs was highlighted in PP&L's Base Rate request before the PUC. The Company went on record during the hearings as being disgruntled with the manner in which decommissioning costs are unfairly distributed among rate payers. Mr. Douglas A. Krall, Manager-Integrated Resource Planning for PP&L is on record decrying the current decommissioning formula during the PP&L Base Rate Case:

Mr. Epstein: "That if the rate increase for decommissioning fossil fuel plants are delayed future customers would unnecessarily be at risk "

Mr. Krall: "Yes. There would be an exposure that a customer who came on the last day of operation of the plant would get very little service from the plant and end up paying the whole cost of decommissioning." (Page 1925, Lines 16-24.)

Mr. Epstein: "But you would not be adverse to assessing future customers who got no electrical benefit from a plant decommissioning costs?"

Mr. Krall. "It doesn't seem to me to be an equitable situation." (Page 1927, Lines 9-13.)

Yet, PP&L sidestepped the issue of intergenerational rate equity and focused on intraclass and interclass cost shifting prior to the *Joint Petition For Full Negotiated Settlement of PP& L Inc 's.'s Restructuring Plan and Related Court Proceedings*, August 12, 1998:

> For any customer, a change in the recovery of CTC costs from a usage rate to a customer charge does not constitute an intraclass or interclass shift in cost recovery, as long as those charges are developed consistent with the rate cap and so that the customer's total bill is held constant during rate restructuring, absent any changes in usage. The Company's approach meets these tests. No customer is picking up costs for another customer within his or her class or from other rate classes. (S.F. Tierny, Pennsylvania Power & Light Company response to interrogatories of the Pennsylvania Petroleum Association, Set A, Dated June 10, 1997. Q. & A. 20.)

This formula only serves active and hostage PP&L rate payers. The Company has made no provisions to insulate near future customers (seven to ten years) from financing stranded debt on a nuclear generating station.

The Pennsylvania Public Utility Commission cited Nuclear Regulatory Commission guidelines that suggested five criteria for evaluating alternative financing mechanisms for nuclear decommissioning. One of the components of was titled "intergenerational equity - that the cost of decommissioning be spread equitably to all rate payers throughout the life of the facility" Unless a more equitable funding formula for nuclear decommissioning is established, rate payers and tax payers who received little or no direct electrical benefit from nuclear generating, will be financially exposed.

The nuclear industry must assume responsibility for their investment strategies. Creating and perpetuating intergenerational debt is reckless and fundamentally inequitable and undemocratic

Future generations may be exposed to gross rate payer inequity if adequate decommissioning funding based on realistic estimates (and not "funding targets") are not assured. The solution should not be a financial safety net provided by hostage rate payers and tax payers excluded from internal corporate decision making "Electric utilities" must assume financial responsibility for their decisions to invest in nuclear power which necessarily means the shareholder should bear a substantial portion of post-deregulation decommissioning expenses. Clearly, a formula must be established that recognizes rate payer and tax payer equity for the realized service that power reactor licensees provide. It is timer for the Nuclear Regulatory Commission to recognize, through its Environmental Impact Statements, that consumers and tax payers are human beings and not abstract, hypothetical billing invoices

F. Nuclear Plant Valuation

CL-02/32 Since deregulation, numerous nuclear plants have changed hands To "cushion" the transition from regulated monopoly to competitive marketplace, many states allowed "electric utilities" to recover "stranded costs". Rate payers are saddled with paying for the industry's uneconomical investments, i.e., "stranded costs. " Two of the most "bullish" nuclear corporations, Exelon and PPL, recovered over $8 3 billion in "uneconomical investments". This figure does not include the millions in savings Exelon and PPL have accrued by unilaterally devaluing the combined PURTA and Real Estate tax assessments for their nuclear generating stations.

The Susquehanna Steam Electric Station is the most glaring example of a company "devaluing" their property at the expense of taxpayers, while billing the same hostage rate payer for uneconomical investments, and exposing this rate payer/taxpayer to further financial exposure related to the underfunding of nuclear decommissioning.

In the of Winter 1999-2000, PPL unilaterally devaluated the combined PURTA and Real Estate tax assessments for the SSES. Prior to the 1998 Joint Petition for Negotiated Settlement, the nuclear power generating units were assessed by PP&L at approximately $1 billion. PPL now claims that the SSES is only worth $74 million or the same amount as the valuation of the Columbia Hospital. Not only did the Berwick School District and Luzerne County experience revenue shock, but PPL refused to pay or escrow any monies they owed to Luzerne County and the Berwick School district while the case was being appealed.

PPL's behavior is all the more egregious in an era where nuclear plant's value on the open-marker are equal to, or in excess, of fossil generating stations. For example. Entergy and Dominion resources engaged in a bidding war to purchase the Fitzpatrick and Indian Point 3 nuclear generating stations from the New York Power Authority (NYPA). The sale established a record high.

> According to press reports, Entergy's winning bid for the total 1,805 megawatts of capacity offered $967 million, or 535 per kilowatt...The price per kilowatt not only exceeds the previous average unadjusted price for nuclear assets - $75 per kilowatt-but also exceeds the average price paid for fossil capacity-$360 per kilowatt." "NYPA's Nuke Auction: More at Sake Than Price?", *Public Utilities Fortnightly*, July 15, 2000, p. 90.

CL-02/33 The GEIS failed to address the issue of nuclear plant "devaluation" and revenue

CL-02/34 shock. This "revised" document also failed to adequately address and factor the socioeconomic impact of "Greenfield" on the revenue base of local municipalities. (*Please refer to Enclosure IV for a report on the impact devaluation has had on communities in Pennsylvania*).

G. JOINT OWNERSHIP

CL-02/35 The most disturbing and financially bizarre component of radiological decommissioning is the relationship between a "power reactor license" and the "minority power reactor licensee ". Unlike "power reactor licensees", " fractional licensees" are not subjected or mandated by the Nuclear Regulatory Commission to empirically verify, report or monitor record keeping relating to nuclear decommissioning funding mechanisms In some instances, even Public Utility Commissions lack the ability to mandate or regulate savings levels from "fractional licensees", e g., Rural Electric Cooperatives.

At PPL's Susquehanna Steam Electric Station, the "minority licensee", the Allegheny Electric Cooperative, is scheduled to contribute 10 (ten) to the total cost of decommissioning funding. The "power reactor licensee's" estimated PPL's share decommissioning share to $724 or 90% of the total cost of decommissioning. Based on this calculation, AEC 's 10% share of $804 million should be $79 million. However, Allegheny is setting aside a figure based on 5% of the final decommissioning costs even though Laurence V. Bladen, Director of Finance and Administrative Services told Mr. Epstein that AEC is basing its decommissioning costs on data supplied by PP&L. (Telephone conversation, March 30, 1995) "Allegheny's portion of the estimated cost of decommissioning SSES is approximately $37.8 million (same figure enumerated in the AEC 1993 Annual Report, p 27) and is being accrued over the estimated useful life of the plant." (Decommissioning Trust Fund Allegheny Electric Cooperative, 1994 Annual Report, **Cost of Decommissioning Nuclear Plant**, p 49) The AEC's cost projections have not changed since 1993.

Unfortunately, Exelon has a similar financial relationship at Peach Bottom with its proportional partner, Public Service Electric and Gas (PSE&G). At Salem, where, PSE&G is the "power reactor licensee," PECO has a similar financial stake but asserted:

> The 42.6 % ownership share in Salem requires that the percentage of the decommissioning be PECO Energy's responsibility. A decommissioning trust fund has been established by PECO Energy and coordinated with PSE&G for that portion of the ownership share
>
> (PECO Energy's Response to EE-I-5a)

PECO and PSE&G have a history of protracted and acrimonious litigation, and decommissioning coordination can not be guaranteed or mandated After the NRC ordered the shut down of Peach Bottom 2 & 3 in 1987, PSE&G, Delmarva Power & Light Company and Atlantic City Electric sued PECO in 1988, and alleged the Company had "breached" its contract under the Owners Agreement. Several tort claims were also filed "As part of the settlement, Philadelphia Electric will pay $130,985,000 on October 1, 1992 to resolve all pending litigation." (Joseph Paquette, President & CEO, PECO, April 8, 1982.)

After Salem's chronic mechanical and technical kept the plant shut down for a prolonged outage, beginning in 1995, Exelon sued PSE&G, and,

> On December 31, 1997, the Company received $70 million pursuant to the May 1997 settlement agreement with PSE&G resolving a suit filed by the Company concerning the shutdown of Salem. The agreement also provides that if the outage exceeds 64 reactor unit months, PSE&G will pay the Company $1 million per reactor unit month.
> (PECO Energy, 1997 Annual Report, **Note 21. Other Income**, p 44)

Clearly, this history of protracted litigation does not foster an ideal environment of comity nor does it facilitate a rational coordination of decommissioning funding

ComEd also has a dysfunctional relationship with its proportional shareholder at Quad Cities. "ComEd ["power reactor licensee"] does not know the mode that MidAmerica Energy [proportional owner] uses for nuclear decommissioning nor the amount of money being set aside by MidAmerica Energy." (PECO Energy's Response to EE-I-6.)

The impact of this uncertainty between decommissioning partners is clear. PECO has no enforcement mechanism to compel PSE&G to fund 42.49% of the decommissioning costs at Peach Bottom. While PSE&G may be obligated to come with their share of decommissioning costs, the "minority licensee" is under no obligation to accept the "power reactor licensee's" estimates or mode of decommissioning. PSE&G tenuous financial position in regard to inadequate decommissioning savings will place a greater fiscal burden on PECO and, thereby; 1) Create further uncertainties about the Company's ability to meet its financial commitments to decommission Peach Bottom 2 & 3; 2) Undermine TLG's net decommissioning estimates; and, 3) Dilute TLG's contingency factor.

CL-02/36 The cost estimates for non-radiological decommissioning (an imprecise term) are not mandated by the NRC. "For PECO Energy Company and ComEd, the costs for 'Greenfield' are included in the cost estimates and in the funding streams established for decommissioning." (PECO Energy's Response to EE-I-8b.) However, Greenfield, i e., the original environmental status of nuclear generating station prior to construction of the nuclear power plant, has never been achieved by an operating nuclear generating station. Moreover, this site status is unattainable if a station is placed in delayed-SAFSTOR, DECO, or ENTOMB.

One only need look at Three Mile Island to see why this is a potential financial boondoggle. Three Mile Island is owned by three different companies, and controlled by one holding company: General Public Utilities. Jersey Central Power & Light (JCP&L), which owns 25% of the plant, was granted permission to raise decommissioning funds anticipating DECON as the method of decommissioning. Metropolitan Edison (Met Ed), which owns 50% of the plant, was denied decommissioning funding based. Met Ed is anticipating SAFSTOR as the preferred method of decommissioning. As it stands, 25% of the decontamination and decommissioning of TMI-2, a plant that operated for 1/120 of its projected life is being picked by JCP&L customers while the other 75% (Pennsylvania Electric owns 25% of TMI) remains in limbo and will most probably be assessed against the shareholders In turn, the shareholders are likely to opt for the cheapest method of decontamination and decommissioning. I.e, ENTOMB.

Exacerbating an already bizarre situation is the fact that AmerGen (PECO Energy and British Energy) owns TMI-1 AmerGen has sole financial and technical responsibility for decommissioning this facility. GPU owns the Possession Only License at TMI-2 which has yet to be decommissioned or decontaminated. Further complicating the situation is First Energy's merger (November 7, 2001) with GPU which includes ownership of Three Mile Island Unit-2

H. REGULATORY AMBIGUITY

CL-02/37 Former Senator John Glenn and the General Accounting Office announced in November 1994, that it is time for the Environmental Protection Agency (EPA) and the NRC to coordinate radiation protection standards which are based on risk-assessment. **Eight years later,** the agencies have been unable and unwilling to settle their conflicting regulatory standards As it stands, how would the nuclear industry determine what levels constitute "Greenfield?" (16) Worker exposures remain decidedly liberal. The NRC allows a 1-in-286 lifetime fatal cancer due to "acceptable" routine releases from NRC licensed facilities and NRC occupational standards for workers is 1-in-8 lifetime fatal cancer Translating this into human terms, Dr. Peter Gartside, Professor of Bio-Statistics at the University of Cincinnati, found workers at Fernald died at significantly younger ages and suffered a higher incidence of intentional and blood cancers than the US population (April, 1994). The Commission has already approved a 1-in-285 lifetime cancer, or 100 MR/year and rejected the Staff's recommendation of 3 MR/year of residual radiation

CL-02/38 The most formidable governmental regulations facing nuclear related industries is conflicting regulatory authority. Uncertainty is the enemy of the electric industry. This is most clearly evident in the decontamination and decommissioning of nuclear power plants

CL-02/39 Funding targets to bring a site back to "Greenfield" are set by the Nuclear Regulatory

CL-02/40 16 The GEIS's glossary superficially glosses over "Greenfield" and equates it with an " an end state of decommissioning..." (M-7 & 2-5).

According to NRC Regulations, Greenfield is achieved when a nuclear generating station is returned to "original status" prior to licensing, construction, and generation of nuclear power. The NRC would then clear the site for "free release" and allow a "school or playground" to be constructed at the former nuclear power plant.

Commission and do not include spent fuel disposal or non-radiological decommissioning. However, the NRC has no rate making authority and electric utilities must go before state utility commissions to recover funding levels "suggested" by the NRC. But the Companies are not mandated by the federal government to submit detailed funding plans until two years prior to site closure. In addition, if a utility has been saving for DECON, but SAFSTOR is necessitated, the funding package becomes grossly inadequate.

Moreover, as Mr. LaGuardia attested (1995 PP&L Base Rate Case, Page 2100, Line 24), there are conflicting radiation clean-up standards for soil, water and surface as defined by the Environmental Protection Agency and the Nuclear Regulatory Commission and each agency has conflicting cleanup standards for site restoration (16). (Witness, LaGuardia, Page 2099, Lines 20-25 and page 2100, Lines 1-18)

17 For further discussion see FR 52061, October 23, 1981; 42 FR 60956, November 30, 1977; 40 CFR 192, 12, July, 1989 and US NRC, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use of Termination of Licenses for Byproduct, Source, or Special Nuclear Material " Policy and Guidance Directive FC 83-23, Division of Industrial and Medical Nuclear Safety, Washington, DC, August, 1987.]

III. SUMMARY

I find it highly unlikely, in today's uncertain utility industry, that anyone would invest in the new plant designs for nuclear power, which are still highly capital intensive. "The Bush Plan and Beyond: Toward a More Rational U.S. Energy Policy," *Public Utilities Fortnightly*, July 1, 2001, p. 37.

CL-02/41 **As of this filing, no commercial nuclear power plant has been decommissioned, decontaminated, and returned to free-release. Nuclear decontamination and decommissioning technologies are in their infancy and several identifiable industrial trends are apparent when reviewing the Nuclear Regulatory Commission's treatment of prematurely shutdown reactors: 1) There is a reluctance to undertake, initiate or finance decommissioning research;**

CL-02/42 **(18); 2) Prematurely shutdown reactors place an additional financial strain on the licensee; and, 3) These reactors have been retired for mechanical or economic reasons. [United States Nuclear Regulatory Commission, *Advisory Panel for the Decontamination of Three Mile Island Unit-2*, September 23, 1993.]**

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18 Q 12. "What technological initiatives are PP&L pursuing to ensure decommissioning technology is available when the SSES is no longer operational?"

A. 12. "PP&L expects that appropriate decommissioning technology will be available at the time Susquehanna is decommissioned, and accordingly, is not pursuing additional 'technological initiatives' at this time." (Company's Response to Interrogatories of Eric Joseph Epstein, Set I, Dated June 3, 1997.)

IV. NEPA & "PSYCHOLOGICAL STRESS"

Before discussion the **ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER**

CL-02/43 **REACTORS; Conclusions,** it is important to address NEPA and "psychological stress." **(Scope - D)** The GEIS correctly paraphrases PANE vs. Metropolitan Edison, and excludes "psychological strews" from the "scope of this supplement". (1-8).T However, the reality is that "psychological stress" exists, and will continue to exist In fact, if the NRC had revisited the issue of "psychological stress" and the TMI community, it would have found the following:

On June 22, 1979, Governor Richard Thornburgh (R) wrote to the NRC, expressing his "deeply felt responsibility for both the physical and psychological well being of the citizens of Pennsylvania." Thornburgh affirmed his "strong opposition to any plans to reactivate Unit -1 until a number of very serious issues are resolved."

Three years later, on January 7, 1982 , the D.C. Circuit Court decided psychological (psych) stress does not need to be covered during the restart hearings. However, the Court ruled, that under the **National Environmental Policy Act (NEPA), psych stress must be addressed. The Court ordered an injunction on restart until a study on psych stress was conducted.** However, on April 19, 1983, The United States Supreme Court reversed the D.C. Circuit Court's opinion on psych stress and ruled an environmental study is not necessary.

Two months later, on May 5, 1983, GPU revealed for the first time to the NRC that management audits, including psychological evaluations, concluded by BETA and RHR, completed in February and March, 1983, were critical of plant operations and management.

In August 1985, Marc Sheaffer, a psychologist at the Uniformed Services University of the Health Sciences in Bethesda, released a study linking TMI-related stress with immunity impairments.

Subsequently in August, 1987, James Rooney and Sandy Prince of Embury of Penn State University reported that chronically elevated levels of psychological stress have existed among Middletown residents since the accident.

Additionally, in April, 1988, Andrew Baum, professor of medical psychology at the Uniformed Services University of the Health Sciences in Bethesda discussed the results of his research on TMI residents in *Psychology Today*. "When we compared groups of people living near Three Mile Island with a similar group elsewhere, we found that the Three Mile Island group reported more physical complaints, such as headaches and back pain, as well as more anxiety and depression. We also uncovered long-term changes in levels of hormones These hormones affect various bodily functions, including muscle tension, cardiovascular activity, overall metabolic rate and immune-system function .."

The NRC can hide behind NEPA or any other convenient acronym, but "psychological stress" is a verifiable fact of life for people who live and work, in and around, nuclear power plants

V: CRITICISMS & SUGGESTIONS of
4.0 ENVIRONMENTAL IMPACTS of DECOMMISSIONING
PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS

CL-02/44 **(4.1.1) Terms of Significance of Impacts**

The Nuclear Regulatory Commission employed a "standard of significance" developed by the Council of Environmental Quality (CEQ).

> **Context** means that the significance of an action must be analyzed in several contexts, such as a society as a whole (human, national) the affected region, the affected interests, and the the locality (4-1.)

However, no "electric utility" constructs, operates, or decommissions a nuclear station without economics being the paramount consideration Yet, the NRC and CEQ have created a nuclear Potamkin Village where economic imperatives are subordinated to the behavioral science flavor-of-the-day. In the NRC's world, an "electric utility" can apply for a loan using NEPA as collateral. I hope that at the end of the GEIS process the Commission can provide me with an address so that I can relocate my family to a neighborhood-without-economic considerations

CL-02/45 **(4.3.1.4) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; On site/*Off* site Land Use - Conclusions:**

The GEIS stated, "It is rare for decommissioning activities to affect off-site land use ." (4-7) This statement fails to recognize that most nuclear generating stations are located in close proximity to substantial water resources. The Susquehanna Steam Electric Station, Three Mile Island and Peach Bottom are located on, or adjacent to the Susquehanna River which feeds the most productive estuary in America, I e., the Chesapeake Bay.

CL-02/46 Decommissioning and decontamination tasks affect people's perception, especially when these visibly intrusive and audibly offensive activities are in close proximity to their homes and recreational areas Peach Bottom and Three Mile Island are located next to prime water skiing and boating areas on the Susquehanna River. Dozens of summer cabins are located less than 100 yards from TMI on Sholley. Fishing takes place on a daily basis, and Boy Scout badges are available by completing outdoor activities on Three Mile Island.

CL-02/47 The Staff should visit TMI and then travel to Clinton Lake to examine how perceptions and reality affect "off site land use".

> After the terrorist attacks, the U.S. Nuclear Regulatory Commission advised all nuclear power plants to move to the highest level of security. Exelon Nuclear, which operates the Clinton nuclear power plant and owns the sprawling, 5,000-acre Clinton Lake, promptly ordered all boats off the lake and closed it.
>
> It remains closed to this day nearly two months later. The power plant uses water from the lake to cool the reactor core.
>
> The closure is causing economic hardship for a number of businesses that cater to boaters, who value Clinton Lake because of its size and its lack of restrictions on boat horsepower. Some business owners say they'll have to shutdown if the lake isn't reopened by next spring.
>
> (*The News Gazette*, Champaign , Illinois, November 4, 2001)

The GEIS must acknowledge the potential for adverse economic impacts on a community during decommissioning

CL-02/48 **(4.3.2.4) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; Water Use - Conclusions:** (The discussion **4.3.1.4 is also relevant)**

The GEIS stated, "The overall water use of a nuclear facility will dramatically decrease one the once the reactor has stopped operating and the demand fro cooling and makeup water ceases." (4 9-4.10) On the surface, this statement appears to be correct. However, at Three Mile Island, a considerable amount of "cleanup water" was created ***after*** the plant was shut down:

In 1980, the Susquehanna Valley Alliance, based in Lancaster, successfully prevented Met Ed (GPU) from dumping **700,000 gallons of radioactive water** into the Susquehanna River. Ten years later (December, 1990), despite legal objections, GPU began evaporating **2.3 million gallons of accident-generated radioactive water** (AGW). From December, 1990 to January 1991, the evaporator was shut down five times due to electrical and mechanical "difficulties." And from April-May1991, the evaporator was shut down for most of this period so GPU could "rewrite the main operating procedure." The Nuclear Regulatory Commission (NRC) issued a Notice of Violation related to evaporator operations. Two months later (June, 1991) the NRC noted repeated mispositioning of AGW valve. The valve in question was also involved in the NRC's Notice of Violation issued in April.

By February 1992, the "portable" evaporator was shut down again due to the failure of the blender-dryer. Replacement of the blender was delayed until August. By May 1992, GPU decided to use a "temporary" blender-dryer until a permanent replacement was installed in August. However, from August-September 1992, some of the water in the evaporator's borated water storage tank was "processed" twice due to "slightly higher activity levels." And in November 1992, approximately **600,000 gallons** of AGW was processed twice due to "slightly higher activity levels." Two months later, (January, 1993) GPU "discovered" they failed to take periodic samples of approximately **221,000 gallons** of AGW in the borated water storage tank

Finally, in August 1993, over six months behind schedule, evaporation of 2.3 million gallons of accident, generated clean-up water was completed...Can anyone at the NRC point to an official document that classifies 700,000 gallons of radioactive water (which later grew to 2.3 million gallons) as "SMALL"?

The people who live and work around TMI have found that the risks associated with additional cleanup water are not "SMALL".

CL-02/49 **(4.3.3.4) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; Water Quality - Conclusions:** (The discussion in **4.3.2.4** is also relevant.)

"The staff concludes that the issue of surface or ground water quality for all decommissioning activities is generic and that the environmental impacts for these activities will be SMALL " (4-12).

Persistent "water quality" problems continue to plague TMI, a prematurely shut down reactor

On November 2, 1993, in a letter to the NRC, GPU Nuclear acknowledged: "During the TMI-2 accident, the cork seam located in the Auxiliary Building Seal Injection Valve Room (SIVR) was contaminated with radioactive water. Attempts to contain the contamination within the room have been unsuccessful During the past 14 years, radioactive material has spread along the joint in one direction into the Annuls, and in the other direction into the Auxiliary Building, Service Building and Control Building West (R L. Long, GPU Nuclear, Director, Services Division/TMI-2)"

On June 4, 1998, "GPUN found several pipes penetrating the wall between the turbine building basement and the control building in Unit-2 to be open on both sides of the wall. This condition was contrary to the Unit-2 post-defueling monitored storage safety analysis report (PDMS-SAR) which requires entrances to the control building area to be watertight or provided with flood panels and openings that are potential leak baths to be sealed." (NRC Inspection Report, 50-289/98-08.) Less than a month later, on July 2, 1998, an LER was necessary due to the breaching of flood barriers "between the turbine building and the control building area due to inadequate fieldwork documents" (NRC Inspection Report, R 50-289/98-08.)

As recently as January 9 and 19, 1999, elevated tritium levels and potential leaks from the waste evaporator condensate storage tank for the months of January, February and March, 1999 were reported. (NRC Inspection Report, 50-289/99-01).

Based on the above documented water quality problems the staff should revisit the rating of "water quality "

CL-02/50 **(4.3.1.4) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; Air Quality - Conclusions:**

"Fugitive dust from those activities performed outside of the building is temporary (19), can be controlled mitigative measures, and will generally not be noticeable off site." (4-16). Once again the experience of TMI-2 is instructive:

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19 Please note that the term "temporary" has been applied unevenly in the GEIS. "Temporary" storage of LLW and HLW is essentially analogous with "indefinite."

In June-July, 1980, for 11 days, Met Ed vented 43,000 curies of radioactive Krypton-85 (10-year half-life; beta and gamma) and other radioactive gasses into the environment without having scrubbers in place. Yet in November, 1980, the United States Court of Appeals for the District of Columbia ruled that the krypton venting was *illegal.*

From July 24-27, 1984, during the reactor head lift, which was delayed to brake failure on the polar crane, GPU vented radioactive gasses into the environment The venting occurred despite pledges by GPU and the NRC that no radioactive releases would take place during the head lift operation. GPU was fined $40,000 for the violation by the NRC.

On July 12, 1985, two workers who participated in the initial phase of the cleanup and contracted cancer, joined 2,500 area residents suing GPU.

On September 25, 1989, two cleanup workers received radiation exposures while handling a "small piece of reactor core debris " in the decontamination area "Officials said preliminary calculations show one worker may have a radiation exposure on the hands above 75 rem. The second worker may have an exposure greater than 18.75 rem. The federal occupational limit for exposure to extremities is 18.75 per calendar quarter." By November 1, 1989 , one of two workers involved in a radiation exposure "incident" may have received 220 rems to the hands, I e., "extremities." The other worker harmed the incident is projected to have received 35 rems of exposure. The incident began when the workers picked up an object they thought was a "nut" or "bolt", but was in fact a piece of highly radioactive fuel. The workers were then advised to throw the "object into the reactor vessel." Since the fuel was "discarded", GPU had to use models to predict dose calculations and exposure rates

GPU was also in violation for failing to report this incident in a timely fashion Additionally, the workers have reported contradictory statements about the event. On January 13, 1990, GPU was fined $50,000 for a violation of "requirements protecting workers "

After ten years of defueling activities, 5,000 TMI workers had received "measurable doses" of radiation exposure. The NRC staff should reconsider the placement and value of the terms "temporary" and "fugitive", and rethink the adverse affects of "air quality" on workers

CL-02/51 **(4.3.5.2) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; Aquatic Ecological Resources- Conclusions:**

(Discussions in 4.3.2.4 & 4.3.3.4 are also relevant.)

The staff found that ". the impact to aquatic ecology for all decommissioning activities is generic and that the environmental impact for these activities is SMALL". (4-19) Unfortunately, the staff biologists are unfamiliar with the unique water chemistry of the Susquehanna River and historic infestations that have afflicted Three Mile Island

In February 1986, one celled organisms believed to be fungus, bacteria and algae-like creatures were discovered. These creatures obscured the view of the reactor core, and **impeded the cleanup** of Three Mile Island -2.

On June 23, 1999, "Three Mile Island, trying to rid itself of clams, recently released too much of a potentially hazardous chemical into the Susquehanna River State regulations allow TMI to release 0 3 parts per million of Clamtrol back into the Susquehanna River. For about an hour, the plant was releasing 10,500 gallons per minute containing twice the amount " (*York Daily Record*, July 7, 1999.)

CL-02/52 The NRC staff correctly concluded, "...the magnitude, (I e , SMALL, MODERATE, LARGE) of potential impacts will be determined through a site specific study...: (4-19). This flexible barometer should be applied to all of the above mentioned **Conclusions.**

CL-02/53 **(4.3.6.4) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS: Conclusion - Terrestrial Ecological Resources:**

The NRC staff aptly stated, "...the magnitude, (i.e., SMALL, MODERATE, LARGE) of potential impacts will be determined through a site specific study..." (4-23). These flexible barometer should be applied to all the above mentioned **Conclusions**

CL-02/54 **(4.3.10.1) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; Occupational Issues - Conclusions:**

(The discussion in **4.3.1.4 is also relevant)**

Labor relations is an essential component, and potential impediment to prompt decommissioning activities. For example:

On August 12, 1982, William Pennsyl, a cleanup worker, was fired for insisting he be allowed to wear a respirator while undressing men who entered highly radioactive areas Pennsyl filed a complaint with the U.S. Department of Labor. William Pennsyl settled out-of-court two days before an administrative law judge was scheduled to hear his case. (April 11, 1984).

On March 22, 1983, TMI-2 senior-safety engineer Richard Parks publicly charged GPU and Bechtel Corporation with deliberately circumventing safety procedures, and harassing him and other workers for reporting safety violations Parks filed a complaint with the U.S. Department of Labor. On August 12, 1985, GPU and Bechtel were fined $64,000 for the incident by the Nuclear Regulatory Commission (NRC). Between March 22, March 27, and April 2, 1983, three senior level plant employees, Richard Parks, Larry King, and Edwin Gischel, charge GPU and Bechtel with harassment, intimidation and circumvention of cleanup safety procedures.

On July 31, 1990, the NRC announced "that an allegation that a shift supervisor on duty at Three Mile Unit 2 control room, during defueling operations in 1987, had sometimes slept on shift or had been otherwise inattentive to his duties, was true..."

> Although some key members of the site management staff were aware of the sleeping problems and some actions were taken to correct it, it [sic] was not effectively corrected until utility corporate management became involved. The NRC staff proposes to fine GPU Nuclear, Inc. (GPUN) the company that operates the TMI site, $50,000. The staff also proposes a Notice of Violation to the former shift supervisor.

Also, in February 1991 an operator "inadvertently flooded the vaporizer" and several days later an operator was discovered "apparently sleeping "

CL-02/55 In 1986, the TMI-2 defueling work force peaked at 2,000 Today less than a dozen AmerGen employees police Unit-2...

Based on the experience at Three Mile Island, the SMALL and MODERATE evaluations need to be upgraded to "LARGE".

CL-02/56 **(4.3.10.3) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; Costs - Conclusions:**

TMIA and EFMR object to the absence of a **Conclusion** in this section, and reassert the merits of its argument articulated in: **A. Current Problems Associated with Cost Estimates for Radiological Decommissioning**, pp. 5- 10.

CL-02/57 The most troubling aspect of this section is the assertion that, "The cost of decommissioning results in impacts on the price of electricity paid by rate payers." (4-45) Due to deregulation, additional decommissioning recovery is either limited or "under-funding" is the sole responsibility of the "electric utility," e g., Three Mile Island Unit-1. The "hostage rate payer" is being replaced by the shareholder who is not likely to advocate paying for the "under-collected" portion of the fund after the plant is permanently shut down.

This section needs to be redrafted and include the following variables:

Cost Estimates for Radiological Decommissioning (20); Planned Operating Life of Nuclear Generating Stations; Spent Fuel Isolation; Low Level Radioactive Waste Isolation; Rate Payer Equity; Plant Valuation, Joint Ownership, and, Regulatory Ambiguity.

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20 On January 25, 2000, the Citizens Utility Board (CUB) petitioned the Illinois Commerce Commission, and requested that ComEd's $480 million decommissioning charge for Zion be denied. "CUB cited a state court ruling that decommissioning costs may be collected while a plant is in service. Zion was taken out of service in 1997 and shut down permanently in 1998." (*Public Utilities Fortnightly*, March 15, 2000, pp. 18-19.)

CL-02/58 **(4.3.1.4) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; Socioeconomics - Conclusions:** (Also Refer to discussion on **F. PLANT VALUATION**, pp. 26-27.)

> The staff concludes that shutdown and decommissioning of nuclear facilities produces socioeconomic impacts that are generic. The impacts occur either through the direct effects of changing employment levels on the local demands for housing and infrastructure or through the effects of the decline of the local tax base on the ability of local government entities to provide public services.(4-53)

There can be no generic measure of the socioeconomic impact of any community without an in-depth study of a number of driving variables. Nuclear plants are subject to various regulations and tax codes based on location, plant history, levels of corporate investment, composition of work force, state and municipal legislation, economic diversity, and municipal relationships.

The number of employees working at TMI has decreased from 900 in 1999 to 650 in 2001. Unlike GPU, AmerGen is a non-union entity, and out of the 650 employees at TMI, it is not clear how many reside in Central Pennsylvania since the Company rotates workers on a regional basis TMI was once a large corporate donor, and one of the region's top 50 employers. Within the last five years, community giving has decreased, and GPU, along with former community scions, AMP, Armstrong Industries, and Rite Aid, have slashed thousands of jobs. Any further cuts in tax revenues, community giving or employment levels, I e , "SMALL 10%" or "MODERATE 10-20%", create undue economic hardships

The amount of taxes paid by TMI-owners prior to the plant's acquisition are listed below, and contrasted with current corporate assessments The plant's assessment value at market rate was $92 million after the purchase in July, 2000. AmerGen has disputed the $49 million valuation (October, 2000).

	AmerGen	GPU
School District	$394,500 (Net)	$210,000-220,000
County:	$146,940 (19)	$635,000 (PURTA)
Township:	$30,000	$8,000
	$571,440	$853,000-$863,000

Amount of Revenue Decrease: $281,560 - $ 291,560 (21)

(Follow-up data from Exelon will be provided by mid-January, 2001. Similar decreases have occurred at Peach Bottom 2 & 3.)

CL-02/59 Before TMI reaches decommissioning, the community has already lost 250 jobs, and over $220,000 in tax revenues. Pennsylvania is not similar to Connecticut (22) whereby the difference in pre- and post-deregulation revenues are made up by the state. These are jobs and revenues are lost forever. Most local and state taxing authorities classify "Greenfield" as non-commercial, tax-paying status.

Moreover, TMI and Peach Bottom are located in rural areas that are sensitive to seasonal fluctuations Farm revenues in the 1980s were sharply down due to drought, avian flu epidemics, and an informal boycott by consumers who did not want to purchase TMI-tainted produce, dairy products, or beef and poultry.

21 Refer to discussion in *Enclosure IV*

CL-02/60 **(4.3.13.4) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS Environmental Justice - Conclusion:**

The NRC made the appropriate demarcation and concluded, "..the issue of environmental justice requires a site-specific analysis " (4-57) (For further discussion please refer to **VI. APPENDIX J: INCORRECT or MISSING DATA; 6)**

CL/02/61 **(4.3.14.2) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS Cultural Resources; Conclusions:**

The NRC properly concluded, "...the magnitude, (i e., SMALL, MODERATE, LARGE) of potential impacts will be determined through a site specific analysis." (4-61)

CL-02/62 One issue that needs to be factored into the equation is what happens when the object of decommissioning has been declared a historical marker, i e., Three Mile Island-2?

CL-02/63 **(4.3.15.4) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS On site/Off site Aesthetics - Conclusion:**

The staff posited that, "any visual intrusion (such as the dismantlement of buildings or structures) would be temporary (22) and would serve to reduce the aesthetic impact of the site " (4-63) By nature, aesthetics is subjective Therefore the staff's conclusion is arbitrary "Because there will be no readily noticeable visual intrusion beyond what is already present from the an operating facility, consideration of mitigation is not warranted " (4-63-64)

22 Please see footnote for a brief discussion on the concept of "temporary "

CL-02/64 The GEIS could have looked more closely at TMI-2, and considered the following "visual scenarios"

On August 5, 1992, GPU "declared an event of potential public interest when the Unit-2 west cooling tower caught fire." The fire lasted for ten minutes. This was the third fire at TMI-2 during the cleanup. The Department of Environmental Resources subsequently instructed GPU to dismantle the wooden paneling and waffling at the base of the cooling towers. The cooling towers now serve as a nesting ground for "fugitive" swallows.

(4.3.16.4) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; Noise - Conclusions:

Please refer to the discussion in **4.3.1.4.**

CL-02/65 **(4.3.17.4) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; Transportation - Conclusions:**

Please refer to *Enclosure V* which features articles highlighting problems with transporting damaged fuel from TMI to Idaho.

VI. APPENDIX J: INCORRECT or MISSING DATA

CL-02/66 1) All references to Three Mile Island-2 as a "decommissioned reactor are in error. The plant has not been decommissioned or decontaminated. TMI-2 was placed in Post-Defueling Monitored Storage in December, 1993.

The plant has been substantially defueled, and debate remains around the K-effective:

> Dr. Michio Kaku, Professor of Theoretical Nuclear Physics at City University of New York, evaluated studies conducted or commissioned by the NRC on the amount of fuel left in TMI-2. Kaku concluded: "It appears that every few months, since 1990, a new estimate is made of core debris, often with little relationship to the previous estimate...estimates range from 608.8 kg to 1,322 kg...This is rather unsettling...The still unanswered questions are therefore precisely how much uranium is left in the core, and how much uranium can collect in the bottom of the reactor to initiate re-criticality. (August, 1993)

Three Mile Island Unit-2 was built at a cost to rate payers of $700 million, and had been on-line for only 90 days, or 1/120 of its expected operating life, when the March 1979 accident occurred. One billion dollars was spent to defuel the facility. Three months of nuclear power production at TMI-2 has cost close to $2 billion dollars in construction and cleanup bills; the equivalent of over $10.6 million for every day TMI-2 produced electricity. The above mentioned costs **do not** include nuclear decontamination and decommissioning or restoring the site to "Greenfield."

At the time of the accident, TMI's owners had no monies put aside for decommissioning. General Public Utilities' (GPU) customers contributed three times as much for the defueling effort than the corporation that caused the disaster, i e , $246 versus $82 million (GPU Nuclear Press Release, January 10, 1985) In January 1993 the Public Utility Commission (PUC) refused GPU's request to hand their customers the TMI-2 decommissioning bill estimated to be at least $200 million. However, several months later the PUC reversed itself and gave GPU permission to pass the cost of the decontamination and decommissioning of TMI-2 onto the rate payer. This decision to financially assess GPU rate payers for the accident was upheld by the Pennsylvania Supreme Court. In 1995, GPU hired a consultant to conduct a site-specific decommissioning study for TMI-2. The "retirement costs" for TMI-2 was estimated to be $399 million for radiological decommissioning and $34 million for non-radiological removal (**GPU, 1997 Annual Report, Nuclear Plant Retirement Costs, p. 52.**)

Although TMI-2 is scheduled to be decontaminated and decommissioned in 2014, if AmerGen requests a license extension at TMI-1, decommissioning will not begin until 2034 or 55 years after the accident.

CL-02/67 **2)** In Table J-2, the location of Peach Bottom is incorrect. Peach Bottom resides in Delta, and is located less than a mile from Lancaster County and the State of Maryland.

3) In Table J-2, the location of Three Mile Island by county is incorrect. Three Mile Island resides in Londonderry Township, Dauphin County. "Northampton" County is located in Northeastern Pennsylvania

In addition, there are four counties located within five miles from Three Mile Island, i.e., Cumberland, Lancaster, Lebanon, and York.

CL-02/68 **4)** J.1 2. and Table J-3. All relevant information is provided on pages 45-46.

CL-02/69 **5)** Table J-4 should incorporate data provided in **F. Nuclear Plant Valuation** pp. 26-27 and pages 44-45.

CL-02/70 **6)** In Table J-5 fails to acknowledge that the "white" population is not monolithic In the case of Three Mile Island a "special white population", i e., the Amish does not utilize electricity, telecommunications, or mechanical transportation, and lives in close proximity to the plant.

VIII. TRANSPORTATION

CL-02/71 Please refer to **(4.3.17.4) ENVIRONMENTAL IMPACTS of DECOMMISSIONING PERMANENTLY SHUTDOWN NUCLEAR POWER REACTORS; Transportation - Conclusions:**

Please refer to the *Enclosure V*, which features articles highlighting problems with transporting spent fuel from TMI to Idaho.

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December 31, 2001

VIA COURIER AND ELECTRONIC MAIL

Chief
Rules and Directives Branch
Division of Administrative Services
United States Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, Maryland

Re: **Draft Supplement to the Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities, 66 Fed. Reg. 56,721 (Nov. 9, 2001)**

Dear Sir or Madam:

The Metals Industries Recycling Coalition ("MIRC") submits the following comments on draft Supplement 1 to the United States Nuclear Regulatory Commission's ("NRC's") "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities" ("the GEIS"), dealing with decommissioning of power reactors 66 Fed. Reg 56,721 (Nov. 9, 2001) The National Environmental Policy Act requires federal government agencies to complete a detailed environmental impact statement for every "major" action that "significantly affects" the environment. 42 U S C. § 4332(C) NRC will rely on this GEIS and the draft Supplement to meet its statutory obligation to prepare an environmental impact statement in future decommissioning activities

MIRC is concerned because the draft Supplement does not contain any meaningful discussion regarding the serious environmental, economic, and socioeconomic impacts of the radioactively contaminated scrap metal that would be released into the economy from facilities preparing for and undergoing decommissioning Such releases would affect the metals industries' ability to recycle scrap metal and threaten the economic viability of metals companies MIRC urges NRC to consider these impacts when preparing the final Supplement to the GEIS.

I. THE METALS INDUSTRIES RECYCLING COALITION

MIRC is an ad hoc coalition of metals industry trade associations comprised of the American Iron and Steel Institute ("AISI"), the Copper and Brass Fabricators Council ("CBFC"), the Nickel Development Institute ("NiDI"), the Specialty Steel Industry of North America ("SSINA"), and the Steel Manufacturers Association ("SMA") The metals industries comprise a major sector of the nation's economy. A significant and growing portion of this production is

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based on recycled scrap metal In a recent study commissioned by the National Recycling Coalition, R W. Beck, Inc reports that combined ferrous and nonferrous metals recycling industry employment totals approximately 350,000 jobs, with a payroll in excess of $12 billion annually and receipts of approximately $90 billion [1]

All of the members of MIRC consume metal scrap to make new metal products The recycling of enormous tonnages of scrap by MIRC members provides substantial environmental benefits, including reusing material that otherwise would be discarded and conserving energy. The energy savings from the steel minimill industry alone in one year are enough to supply the energy needs of the city of Los Angeles for eight years. The recycling of scrap is a sophisticated, technology-based industry, involving highly controlled scrap selection and blending processes to meet detailed customer specifications A growing number of customers are setting specifications that include certification of minimum radioactivity levels in metal components and products.

The metals industries that MIRC represents strive to boost public confidence in the safety, strength and recyclability of metal products, and they invest significant time and resources in product promotion, sponsoring advertising, grass-roots initiatives, and educational activities. Moreover, all of the metals industries expend considerable resources on research regarding the effects of metals on human health and the environment, with an emphasis on creating safer products.

In the metals business, scrap metal is a valuable feedstock that is bought and sold as a commodity. Scrap accounts for a significant, if not the largest, portion of metals companies' production costs Given that scrap metal has such a high value, the metals industries generally support public policies that serve to increase the quantity of scrap metal available in the economy and actively promote recycling Scrap metal with residual radioactive contamination, however, including scrap metal that would be released from nuclear power reactor facilities in preparation for and during decommissioning, would undercut efforts to protect the scrap supply from radioactivity, and is not acceptable to the metals industries.

II. METALS INDUSTRIES' RESPONSE TO RADIOACTIVITY

Since the 1980s, metals companies have been installing and using sensitive, highly sophisticated radiation detection systems Metals producers also have developed sophisticated monitoring protocols and procedures to ensure that they do not inadvertently allow contaminated scrap metal, including sealed sources that have escaped NRC regulation, to enter their mills. The metals industries' objectives in doing this are to protect workers and consumers and to prevent radioactive contamination in their mills. Inadvertent meltings of sealed sources can contaminate products, waste streams, mill equipment and the surrounding property. Radioactive contamination has caused individual metals companies to incur tens of millions of dollars in

[1] R.W. Beck, Inc., *US Recycling Economic Information Study* (July, 2001) at ES-6, Figs. ES-3 & ES-4

clean-up and decontamination costs, per incident. These incidents can bankrupt individual metals companies. Metals companies have a financial interest in keeping radioactivity out of their mills, and have set their detectors to detect at or slightly above background radiation levels, to protect against the possibility of sealed sources ending up in the melt. Accordingly, scrap metal that sets off metal company radiation detectors is rejected

III. NRC'S RELEASE GUIDANCE

CL-03/1 Since at least as early as 1974, NRC has espoused a policy of "unrestricted release" of solid materials, including scrap metal, from nuclear fuel cycle facilities, without any specific, health-based release criteria. Unlike NRC requirements applicable to gaseous and liquid releases from nuclear facilities, there are no specific criteria governing releases of solid materials by licensees. Requests to release solid material are approved on a case-by-case basis using existing regulatory guidance and license conditions.

The regulatory guidance is a generic, five-page document entitled "Regulatory Guide 1 86, Termination of Operating Licenses for Nuclear Reactors" ("Reg Guide 1.86"). Reg. Guide 1 86 was published in 1974, without public notice and comment, by NRC's predecessor agency, the Atomic Energy Agency. Under Reg. Guide 1.86, nuclear fuel cycle facilities are allowed to release for unrestricted use solid materials that meet "acceptable surface contamination levels." *See* Table I, Reg. Guide 1.86 These "acceptable" contamination levels are based on surface activity as measured in disintegrations per minute. They are based on the detection technology readily available in 1974 and not on public health or environmental considerations The measurements in disintegrations per minute have no bearing on doses to the public or exposure, nor do they account for the impact of the radioactive contamination on metals industry operations

Under Reg Guide 1.86, nuclear fuel cycle facilities do not have to employ the same level of screening for small amounts of residual surface activity that metals companies must use to keep radioactivity out of their mills. Scrap released pursuant to surface activity levels in Reg Guide 1 86 has caused radiation detectors at metals company facilities to alarm when no sealed sources were present. In short, a load of scrap metal that is acceptable for a power reactor facility to release is not an acceptable feedstock for metals company manufacturing operations

IV. THE DRAFT SUPPLEMENT

A. Environmental Impacts

NRC's intent in producing this Supplement was "to consider in a comprehensive manner all aspects related to the radiological decommissioning of reactors." NUREG-0586 Draft Supp. 1
CL-03/2 at xi (Oct. 2001). Yet, the Supplement does not discuss the potential environmental impacts of releasing scrap metal or other solid materials pursuant to NRC's unrestricted release guidance, except to state that licensed facilities must comply with standards in 10 C F R. part 20, limiting

the sum of allowable internal and external doses to individual members of the general public to 0 1 rem per year. NUREG-0586 at 4-26 (Allowable doses to individual members of the public following license termination are limited to 25 millirem per year during the control period and 100 millirem per year after the end of institutional controls. *See* 10 C.F.R. § 20 1402) As discussed in the previous section, 10 C.F.R. part 20 does not contain any release standards for
CL-03/3 solid materials. Although it is not certain, a strong possibility exists that power reactors could release scrap metal that has a serious impact on the environment, such as by contaminating the soils or groundwater underneath a scrap yard or by escaping detection and becoming melted inadvertently in a metal company furnace. Furthermore, certain isotopes in scrap metal that escape detection before melting may accumulate and concentrate in emission control systems at metals company facilities, to the extent that metals producers could generate low-level wastes ("LLW") or mixed wastes.

CL-03/4 Even if NRC eventually does establish dose-based clearance standards for solid materials, thousands of tons of scrap metal with residual radioactive contamination still would be released into the economy or sent to LLW or industrial waste landfills. If the scrap is released for reuse in the economy, it could have a devastating effect on metals recycling. The introduction of added radioactivity in the scrap supply would make it difficult or impossible for metals producers to meet certain product specifications. Customers who require their metals components to be free of radioactivity are driven by consumer demand for safe products and by the necessity in sensitive applications, such as in computers, for the metal to be radiation-free

The mere possibility that products made with recycled metals may contain materials that were released from nuclear facilities could cause a significant number of consumers to purchase consumer goods made of substitute materials. A survey commissioned by the Steel Alliance found that 61 percent of Americans believed it would be a bad decision (42 percent said "very bad") to allow steel from closed down nuclear facilities to be recycled into the mainstream production of new steel products.[2] When those who opposed the idea of recycling radioactive scrap metal were asked if they would change their mind if they were assured that the material met government safety standards, they remained skeptical, with 74 percent continuing to oppose such recycling (and 51 percent saying it would be a "very bad" decision). If radioactive scrap were recycled into the manufacturing of new steel, three out of four Americans (73 percent) said they would be less likely to purchase food products packaged in steel cans; 62 percent would be less likely to purchase a steel-framed house; and half (53 percent) would be less likely to purchase an automobile made of steel. Finally, survey respondents' favorable impression of steel before and after discussing the potential introduction of steel from nuclear facilities being recycled into everyday products plunged 24 points on a 100-point rating scale,[3] from

[2] The survey was conducted by Wirthlin Worldwide, an independent research firm, and involved polling of four focus groups followed by a phone survey of 1,007 individuals.

[3] On the 100-point scale, a score of 50 indicates a neutral opinion, above 50 a positive opinion. and below 50 a negative opinion.

approximately 68 to 43.6. Hence, the impression of steel went from solidly positive to negative as a result of the radioactive scrap recycling issue.

Therefore, it is not implausible to expect that retail consumers would demand certification that their products are made with mined virgin ores or would eschew metal consumer products altogether. This consumer reaction, coupled with the fact that many sensitive applications, like computer components, require radiation-free metal, would lead manufacturers to demand that the metal they purchase be free of residual radioactivity. This result would be a marked reduction in metals recycling rates and an increase in consumption of virgin mined ores. Thus, the introduction of added radioactivity into the scrap stream would undermine the environmental contributions made each year by recycling scrap metal

B. **Economic and Socioeconomic Impacts**

CL-03/5 The draft Supplement discusses the economic impacts of decommissioning, including the fact that the Barnwell Low-Level Radioactive Waste Management Disposal Facility in South Carolina, the last remaining facility to dispose almost all classifications of LLW, is scheduled to stop accepting LLW from all NRC licensees except those in the Atlantic Compact, by 2009. *Id* at 4-43 Yet, decommissioning of most nuclear power reactors is not expected to occur until after 2009. The existence of the EnviroCare disposal facility in Utah, which can accept Class A wastes for disposal, mitigates the economic impact of losing Barnwell, but nuclear power plant operators still are expected to incur significant waste disposal costs. The Supplement discusses how these costs are passed on to electricity customers. The Supplement also analyzes the socioeconomic impacts of decommissioning with respect to the communities surrounding power reactors. These impacts include direct and indirect job losses, losses in tax revenues and reductions in local governments' ability to pay for public services *Id.* at 4-47 - 4-53. Yet, the draft Supplement does not discuss the economic and socioeconomic impacts on the metals industries related to the release of radioactively contaminated scrap metal into the economy.

1. **Impact on Metals Company Operations**

To prevent sealed sources from contaminating their operations, metals companies have installed sophisticated radiation detection systems and monitor all incoming shipments of scrap metal for radioactivity. When a radiation detector alarms, the metals company responds, typically by rejecting the load of scrap or hand sorting it to determine where the radioactive contamination is located This causes metals companies to incur significant costs. Often metals producers stop the production process whenever the radioactivity is detected, to take appropriate measures, including rejecting the load of scrap outright. These measures are necessary but impose unreasonable costs on the metals industries.

CL-03/6 The release of scrap metal from power reactors undergoing decommissioning will present a far more insidious problem than orphan sources, by greatly increasing the volume of radioactive scrap arriving at, and the frequency of alarms at, metals companies This poses a

serious problem for the suppliers and transporters, who must manage and arrange for the ultimate disposition of the rejected scrap It would have a similarly enormous adverse impact on the smaller producers, foundries, scrap dealers and processors, fabricators, and end product manufacturers Metals companies experiencing several alarms daily would continue to incur enormous costs, either unfairly increasing their manufacturing costs or compelling them to raise detection levels to above background, thereby exposing themselves to increased risk of inadvertently melting sealed sources Receipt of even slightly elevated levels of radioactively contaminated scrap imposes enormous costs on metals companies.

2. **Impact on Consumer Perception of Metal Products**

The unrestricted release of radioactively contaminated metal for recycling would tarnish the perception of recycling as a social good that should be encouraged Aversion to perceived radioactive risk could lead consumers to avoid products made of metal, especially those with a recycled metal content. Metals recycling industries have worked hard to build public confidence in the safety and utility of products made from recycled metal. This confidence would be lost if the public, rightly or wrongly, perceives such products to be unsafe. For this reason, metal companies have not, and will not, accept scrap that is known or perceived to be radioactively contaminated

The public's perception is that any level or type of radioactivity is unsafe, official assurances to the contrary notwithstanding. The public, including workers at metals companies, will neither understand nor accept the release of radioactively contaminated scrap from nuclear facilities and its use as a feedstock in the manufacture of consumer products

CL-03/7 Accordingly, MIRC urges NRC to look at all of the economic consequences (*i e*, lost sales, employment reductions, and losses in sales by suppliers of equipment, materials, and services to metals industries) to be incurred by the metals industries and allied sectors, as well as the losses in tax revenues to be incurred by governmental entities

3. **Incentives for Unrestricted Release**

CL-03/8 The economic and socioeconomic impacts of decommissioning, coupled with the lack of health-based release criteria using dose-based standards, create a disturbing incentive for the nuclear power industry to release as much surplus metal as it can into the economy and market it as useful material, rather than incurring additional disposal costs when the scrap metal meets general regulatory release guidelines but may contain levels of residual radioactivity unacceptable to metals producers. NRC's recognition of these economic and socioeconomic impacts and its concurrent failure to consider the impacts of contaminated scrap metal on the metals industries create the mistaken impression that the agency has covered all of the significant impacts of decommissioning

V. CONCLUSION

CL-03/9 MIRC appreciates the opportunity to comment on the draft Supplement and urges NRC to consider in the final Supplement to the GEIS the environmental impacts of releasing radioactively contaminated scrap metal into the economy for unrestricted use, as well as the economic impacts on the metals industries and related socioeconomic impacts.

If you have any questions, please contact us

Sincerely,

John L. Wittenborn /bp

John L. Wittenborn
Christina B. Parascandola

11/9/01
66FR56721
(4)

December 27, 2001
MN-01-049 RA-01-190

FILED ELECTRONICALLY
TO NRC "dgeis@nrc.gov"

UNITED STATES NUCLEAR REGULATORY COMMISSION
Attention. Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T 6 D 59
Washington, DC 20555-0001

Reference: (a) License No DPR-36 (Docket No 50-309)
(b) NRC Notice of Availability of the Draft Supplement to the Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities and Notice of Public Meetings, 66FR56721, dated November 9, 2001

Subject: Maine Yankee Comments on NUREG-0586 Draft Supplement 1 "Generic Environmental Impact Statement (GEIS) on Decommissioning of Nuclear Facilities"

CL-04/1 Overall, Maine Yankee (MY) believes that the Supplement provides a fair update of the sections of the 1988 NUREG versions relating to pressurized water reactor, boiling water reactors, and
CL-04/2 multiple reactor stations. However, while the stated intent of the Supplement is to consider in a comprehensive manner all aspects related to the radiological decommissioning of nuclear reactor facilities, the Supplement sometimes deviates from this intent by delving into activities and impacts related to the removal of uncontaminated structures, systems, and components such as intake structures or cooling towers While the consideration of these impacts may be useful and helpful, their inclusion without proper caveat may tend to blur the line of NRC jurisdiction.

Attached are some specific comments on the draft NUREG Supplement. We appreciate the opportunity to provide comments. If you have any questions with regard to our comments, please contact me.

Sincerely,

Original Signed by Michael A. Whitney for TLW

Thomas L. Williamson, Director
Nuclear Safety and Regulatory Affairs

c: Mr. M. K. Webb, NRR Project Manager
Mr. C. L. Pittiglio, NRC NMSS Project Manager, Decommissioning
Mr. R. Ragland, NRC Region I

Template = ADM-013 E-RIDS = ADM-03
Cert = M. Masnik (MTM2)

Maine Yankee Comments on NUREG-0586 Draft Supplement 1 "Generic Environmental Impact Statement (GEIS) on Decommissioning of Nuclear Facilities"

Mr. H. J. Miller, NRC Regional Administrator, Region I

I. General Comments

A. Supplement 1 represents a good effort by the NRC to update the environmental impacts of decommissioning based upon the actual experience encountered by nuclear facilities.

B. The Supplement sometimes deviates from this intent of considering impacts related to the radiological decommissioning, by delving into activities and impacts related to the removal of uncontaminated structures, systems, and components such as intake structures or cooling towers. While the consideration of these impacts may be useful and helpful, these considerations should be properly annotated with a caveat that these activities are beyond NRC's decommissioning jurisdiction.

II. Comments Related to Section 4 Environmental Impacts

CL-04/3 A. **4.3.4 Air Quality,** (4.2.4.2) pg. 4-14, last para., last full sentence: This statement indicates that in most cases the number of shipments of other materials (non-radioactive materials) will be small compared to those for LLW. This is not necessarily the case for a plant which is removing all above grade facilities. However, this fact should not affect the conclusion that the air quality related environmental impacts for these activities will be small.

CL-04/4 B. **4.3.5 Aquatic Ecology** (4.3.5.4) pg. 4-19, 1st para., last sentence. This conclusion would result in site-specific analyses for the use of areas beyond the previously disturbed areas if there is a potential to impact the aquatic environment. The vagueness of the condition "potential to impact" could be result in a site-specific analysis for any potential no matter how remotely possible. The NRC should consider rewording the condition to say "there is expected to be or likely to be an impact" Also on the previous page (pg. 4-18 last para in section 4.3 5.2,) it appears that a site-specific assessment would be required merely if the aquatic environment has not been characterized. NRC should clarify that a site specific EIS is not necessary just because the lack aquatic environment characterization, but rather, if an area beyond the previously disturbed area is to be used and no associated characterization of the aquatic environment, if applicable, exists, then such a characterization should be conducted. Then as stated above, if there is expected to be or likely to be an impact to the aquatic environment, then a site-specific analysis should be conducted.

CL-04/5 C. **4.3.6 Terrestrial Ecology** (4.3 6.4), pg. 4-23, last para in section 4.3.6 4, last sentence. This should be reworded to be the same as section 4.3.5 4 as modified in the comment above.

Maine Yankee Comments on NUREG-0586 Draft Supplement 1 "Generic Environmental Impact Statement (GEIS) on Decommissioning of Nuclear Facilities"

CL-04/6 **D. 4.3.7 Threatened and Endangered Species** (4.3.7.4), pg. 4-25, last para., last sentence. This conclusion indicates that the NRC will meet its responsibilities on a site specific basis during any decommissioning process, but it does not specify how the NRC will meet its responsibilities or what information it will need from licensees.

CL-04/7 **E. 4.3.8 Radiological** (4.3.8.3), pg. 4-29, 4th full para., last sentence. Maine Yankee agrees that it is not necessary to update the estimates for exposure found in the 1988 GEIS.

CL-04/8 **F. 4.3.13 Environmental Justice** (4.3.13.4), pg. 4-57, last para., last sentence. This conclusion indicates that licensees will need to provide appropriate information related to environmental justice as part of the environmental portion of the PSDAR, but it does not specify what kind of information is needed or what evaluation criterion should apply.

CL-04/9 **G. 4.3.14 Cultural, Historical and Archeological Resources** (4.3.14.4), pg. 4-61, last paragraph in section 4.3.14.4, last sentence. This conclusion indicates that the NRC will meet its responsibilities on a site specific basis during any decommissioning process, but it does not specify how the NRC will meet its responsibilities or what information it will need from licensees.

CL-04/10 **H. 4.3.17 Transportation** This section does not seem to give sufficient attention to licensees that are removing all above grade structures from the site and transporting all of the above grade concrete offsite. The volume of concrete for PWR DECON is much to low for this situation by a factor of three or four. Provided below is Maine Yankee's update of its LLW Volume information. This information is consistent with Maine Yankee's License Termination Plan Revision 2. This waste volume is greater than that assumed in the GEIS. However, even with the increased LLW Volume associated with the removal of all above grade concrete, Maine Yankee's estimates of public dose is still less than that assumed in the draft supplement or the 1988 GEIS because of the extensive use of rail transportation.

III. Comments Related to Maine Yankee Data

Maine Yankee will be reviewing and updating all uses of Maine Yankee data including:

CL-04/11 **A. Appendix F Summary Table of Permanently Shutdown and Currently Operating Commercial Nuclear Reactors**, pg. F-1, Table F-1 Permanently Shutdown Commercial Nuclear Plants {Total Site Area (ac.) For Maine Yankee: 741 (should be 820)}

B. Appendix G Radiation Protection Considerations for Nuclear Power Facility

Maine Yankee Comments on NUREG-0586 Draft Supplement 1 "Generic Environmental Impact Statement (GEIS) on Decommissioning of Nuclear Facilities"

Decommissioning

1. G.2.2 Dose to Members of the Public

CL-04/12 **a.** Pg. G-21, Table G-15 Summary of Effluent Releases Comparison of Operating Facilities and Decommissioning Facilities
The values associated with the maximum, minimum and average gaseous effluents for the Decommissioning Reactors do not add up. The Fission and Activation Gasses for gaseous effluents are incorrectly all the same for the maximum, minimum and average in each category (PWR & BWR). It appears that the minimum category for Decommissioning PWR's is Maine Yankee. If so, the minimum value for Fission and Activation Gasses for gaseous effluents should be "none detected". Making this correction appears to make the table added up assuming a PWR population of two.

CL-04/13 **b.** Pg. G-22, Table G-16 Summary of Public Doses from Operating and Decommissioning Facilities
This table is not well formatted and difficult to interpret. The table mixes the collective dose in person-rem with the individual dose in mrem. The years of concern are assorted. We suggest that the table be simplified and either further discussed in the Section G.2.2 text or eliminated. The following is Maine Yankee's data on individual public doses from Maine Yankee's effluents for 1998, 1999 & 2000:

Maine Yankee Effluent Data	1998	1999	2000
Liquid Effluents			
Total Body (mrem)	1.2E-2	1.5E-3	9.6E-3
Critical Organ (mrem)	4.3E-2	2.9E-3	1.8E-2
Gaseous Effluents			
Critical Organ (mrem)	5.0E-3	5.3E-3	4 3E-3
Beta Air (mrad)	ND*	ND*	ND*
Gamma Air (mrad)	ND*	ND*	ND*

* None Detected

Maine Yankee Comments on NUREG-0586 Draft Supplement 1 "Generic Environmental Impact Statement (GEIS) on Decommissioning of Nuclear Facilities"

C. Appendix J Additional Supporting Data Related to Socioeconomics and Environmental Justice ***Guerrette/Howes/Arnold***

CL-04/14 1. Pg. J-2, Table J-1 Impact of Plant Closure and Decommissioning at Nuclear Power Plants Currently Being Decommissioning
Maine Yankee's Post Termination Workforce should be 360 rather than 246 resulting in a Maximum Workforce Change of 121 rather than 235.

CL-04/15 **D. Appendix K Transportation Impacts,** pg. K-2, Table K-1 Low-Level Waste Shipment Data for Decommissioning Nuclear Power Facilities {LLW Volume for Maine Yankee is indicated as 5920 cubic meters. The Maine Yankee LTP Rev. 2 states: 31,924 cubic meters for transport and 26,920 for disposal after processing}

IV. Typographical/Editorial and Other Comments

CL-04/16 **A. 3.1.4 Formation and Location of Radioactive Contamination and Activation in an Operating Plant,** pg. 3-15 This description should include the activation of corrosion products as a contributor to radioactive contamination.

P-113

CL-04/17 **B. 3.3.3 Decommissioning Process** pg. 3-29, 2nd full para. This paragraph is redundance to the preceding and the seceding paragraphs and can be deleted in its entirety.

CL-04/18 **C. 4.3.5 Aquatic Ecology** (4.3.5.2), pg. 4-17, 1st para in section 4.3.5.2, 4th sentence, "Aquatic environment s" should be corrected.

CL-04/19 **D. Appendix A Draft Generic Environmental Impact Statement Scoping Summary Report: Comments in Scope** pg. A-2, Written Comment Letters: George A. Zinke is listed as the "Director, Nuclear Safety & Regulatory Affairs, U.S. Environmental Protection Agency." This reference should be revised to indicate; "Director, Nuclear Safety & Regulatory Affairs, Maine Yankee Atomic Power Co."

11/9/01
66 FR 56121
(5)

From: "GENOA, Paul" <phg@nei.org>
To: "dgeis@nrc.gov" <dgeis@nrc.gov>
Date: 12/28/01 11 09AM
Subject: NEI Comments on Draft Supplement 1

Attached are NEI's comments. They are also being sent by mail---phg

Paul H. Genoa
Nuclear Energy Institute
Phone. (202) 739-8034
Fax: (202)785-1898
E-Mail: phg@nei.org

NEI
NUCLEAR ENERGY INSTITUTE

James W. Davis
DIRECTOR, OPERATIONS
NUCLEAR GENERATION

December 28, 2001

Chief, Rules and Directives Branch
Division of Administrative Services
U. S. Nuclear Regulatory Commission
Mail Stop T6-D59
Washington, DC 20555-0001

SUBJECT: Industry Comments on Draft Supplement 1 to the Generic Environmental Impact Statement (GEIS) on Decommissioning of Nuclear facilities

The Nuclear Energy Institute (NEI) appreciates the opportunity to provide the following comments on behalf of the nuclear industry. The industry attended all four public meetings held by the NRC on the draft GEIS to offer comments in support of the document. While the industry identified technical corrections or additions to improve the accuracy of the document, they do not alter the conclusions reached in the evaluation.

CL-05/1 Draft supplement 1 represents a useful update of the environmental impacts of decommissioning based upon over 200 facility-years' worth of actual decommissioning experience accumulated by nuclear facilities since the NRC published the initial GEIS in 1988. NEI concurs with the GEIS conclusions, which found that for the *"...environmental issues assessed, most of the impacts are generic and SMALL for all plants regardless of the activities and identified variables..."*

NEI commented in the scoping process that potential environmental impacts associated with the rubblization concept be analyzed in the GEIS Supplement. The non-radiological impacts are assessed, however *"...the staff has determined that Rubblization, or on-site disposal of slightly contaminated material, would require a site-specific analysis and the radiological aspects of the activity would be addressed at the time the license termination plan is*

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E-KIDS = ADM-03
CRR = M. Hasdik (MTM2)

submitted."

CL-05/2 In order to ensure that the radiological aspects of this activity are assessed consistently, NEI recommends that standard dose modeling assumptions be documented directly through the Q&A process associated with the NRC guidance consolidation project.
Specific comments on the draft are provided in the attachment. They are provided to improve the accuracy of the data included in the draft, however they do not alter the conclusions documented in the supplement.

Once again, NEI appreciates the opportunity to provide these comments. If you have questions concerning the enclosed comments, please contact me at (202) 739-8105 or Paul Genoa at (202) 739-8034.

Sincerely,

James W. Davis

PHG/maa
Enclosure

Draft NUREG-0586, Supplement 1
Specific Industry Comments

Comments on the Executive Summary:

CL-05/3 Executive Summary, page xiv, line 20 - references 10 CFR 50.82(a)(6)(ii) which states that the licensee must not perform any decommissioning activity that causes any significant environmental impact not previously reviewed. The supplement at page 1-8 beginning on line 23 defines three levels of significance SMALL, MODERATE, and LARGE. At which of these significance levels does the requirement of 10 CFR 50.82(a)(6)(ii) come into affect? This needs to be defined as several Environmental Issues, e g. threatened and endangered species are listed as site-specific.

Comments on GEIS Section 3:

CL-05/4 Section 3.1.3, p 3-8 – add "The systems described are typical and may differ at specific facilities." to end of the 1st paragraph.

CL-05/5 Section 3.1.3, p 3-10, 1st paragraph – add "or similar document" following "(ODCM)", since limits may be in Technical Specifications rather than an ODCM. Also, the description of effluent systems should include mention of an evaporator, since some facilities use evaporation to convert liquid waste to gaseous and monitor their discharge.

CL-05/6 Section 3.1 3, p 3-13, last paragraph – shipment of contaminated apparatus or hardware may also occur to support specific activities.

CL-05/7 Section 3.1.3, p 3-14, 1st paragraph – shipment may also occur on barges or other ships.

CL-05/8 Section 3.1 4, p 3-15, last paragraph – clarify whether the last sentence is referring to radiation exposure during decommissioning or operation. In context, the inference is that the activation products provide the main source of radiation exposure to plant personnel in an operating plant, but typically contaminated materials provide more exposure to plant personnel during operation.

CL-05/9 Section 3.2, p 3-16 – the definition of SAFSTOR should more clearly define that it includes the final decontamination of the facility. This would be more consistent with definitions used elsewhere.

CL-05/10 Section 3.2 p 3-20 - defines two ENTOMB options developed specifically to envelope a wide range of potential options by describing two possible extreme cases of entombment. These extremes are useful in bounding an analysis, however they may be inappropriate for analysis to support a potential rulemaking for this option.

Comments on GEIS Section 4:

CL-05/11 Section 4.3.4.2, p 4-14, 2nd paragraph – not all decommissioning sites have or will have building ventilation systems, especially those that are in SAFSTOR for many years. Temporary systems will be established, as needed, for gaseous effluents during decommissioning if installed systems are no longer functional.

Monitoring of air quality is not necessarily performed during the storage period, depending on activities, storage period and source term.

CL-05/12 Section 4.3.4.4, p 4-16, 1st paragraph – add the following sentence to the end of the paragraph: "Particulates produced by decommissioning activities within buildings will be filtered as needed so that air quality impacts will be small."

CL-05/13 Section 4 3 4 pg. 4-14, last paragraph - This statement indicates that in most cases the number of shipments of other materials (non-radioactive materials) will be small compared to those for LLW. This is not necessarily the case for a plant that is removing all above grade facilities. However, this fact should not affect the conclusion that the air quality related environmental impacts for these activities will be small.

CL-05/14 Section 4.3.5 pg. 4-19, 1st paragraph - This conclusion would result in site-specific analyses for the use of areas beyond the previously disturbed areas if there a potential to impact the aquatic environment exists. The vagueness of the condition "potential to impact" could be result in a site-specific analysis for any potential no matter how remotely possible. The NRC should consider rewording the condition to say "there is expected to be or likely to be an impact" Also on the previous page (pg. 4-18 last paragraph in section 4.3.5.2,) it appears that a site-specific assessment would be required merely if the aquatic environment has not been characterized. NRC should clarify that a site specific EIS is not necessary just because the lack aquatic environment characterization, but rather, if an area beyond the previously disturbed area is to be used and no associated characterization of the aquatic environment, if applicable, exists, then such a characterization should be conducted. Then as stated above, if there is expected to be or likely to be an impact to the aquatic environment, then a site-specific analysis should be conducted.

CL-05/15 Section 4 3 6, pg. 4-23, last paragraph - This section should be reworded as in

section 4.3.5.4, as modified by the comment above.

CL-05/16 Section 4 3 7, pg. 4-25, last paragraph - This conclusion indicates that the NRC will meet its responsibilities on a site specific basis during any decommissioning process, but it does not specify how the NRC will meet its responsibilities or what information it will need from licensees.

CL-05/17 Section 4 3 13, pg. 4-57, last paragraph - This conclusion indicates that licensees will need to provide appropriate information related to environmental justice as part of the environmental portion of the PSDAR, but it does not specify what kind of information is needed or what evaluation criterion should apply.

CL-05/18 Section 4.3.14, pg. 4-61, last paragraph - This conclusion indicates that the NRC will meet its responsibilities on a site specific basis during any decommissioning process, but it does not specify how the NRC will meet its responsibilities or what information it will need from licensees.

CL-05/19 Section 4.3.17 pg. 4-68 - This section does not seem to give sufficient attention to licensees that are removing all above grade structures from the site and transporting all of the above grade concrete offsite. The volume of concrete for PWR DECON is much to low for this situation by a factor of three or four based recent experience.

From: "Routh, Stephen" <sdrouth@bechtel com>
To: "dgeis@nrc gov" <dgeis@nrc gov>
Date: 12/21/01 9 48AM
Subject: Bechtel Comments on NUREG-0586, Draft Supplement 1

11/9/01
66FR56572,
(6)

December 21, 2001

VIA E-MAIL TO DGEIS@NRC GOV

Chief, Rules and Directives Branch
Division of Administrative Services
Mail Stop T6 D59
U S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Public Comment on Draft Supplement to the Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities, 66 Fed Reg 56721

Dear Sir or Madam:

The purpose of this letter is to provide Bechtel Power Corporation's comments on draft Supplement 1 to NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities."

Comment #1

CL-06/1 Table 4-1 provides estimates of cumulative occupational dose for decommissioning reactors (comparison of the 1988 GEIS to new estimates compiled for draft Supplement 1) In order to reflect the conclusions of Section 4 3 8, it is recommended that a note be added to Table 4-1 to clarify that these estimates of cumulative occupational dose are generic and are not intended to be site-specific limits

Comment #2

CL-06/2 Out-of-scope activities are identified and discussed in Section 1 and Appendix D. It is recommended that "Interim Storage of Greater Than Class C Waste" also be identified as an out-of-scope activity, consistent with the final rule published in Federal Register Vol. 66, Number 197, dated October 11, 2001.

Comment #3

CL-06/3 Section 4 3 9 and Appendix I discuss the potential for, and consequences of, postulated radiological accidents. On page I-2 of Appendix I, the text states, "As a result of improvements in the technology used for decommissioning, several of the accidents listed in Table I-2 may now be considered to be of a much lower probability or, at the least, to result in much-reduced consequences " It is recommended that the text be revised to identify typical technology

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E-RIDS = ADM-03
Add = M Mossik (MTM2)

improvements. For example, some of the plants currently undergoing decommissioning intend to use single failure proof cranes to preclude the potential for certain postulated spent fuel cask drop or heavy load drop accidents.

Thank you for the opportunity to review and provide comments on draft Supplement 1 to NUREG-0586. Should you have any questions on the comments, please contact me at (301) 228-6245.

Sincerely,

S.D. Routh

Stephen D. Routh
Manager of Regulatory Affairs

December 27, 2001
Sent via certified mail
Emailed to dgeis@nrc gov

Chief of Rules and Directives Branch
Div. of Administrative Services
Mail Stop T 6 D 59
U S Nuclear Regulatory Commission
Washington, D C. 20555-0001

RE: Draft Supplement 1 to NUREG-0586, Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities

COMMENTS OF GEORGIANS FOR CLEAN ENERGY

Georgians for Clean Energy is a non-profit, statewide membership organization that has been working in Georgia for 18 years to protect air and water resources by changing how energy is produced and consumed. We are based in Atlanta, Georgia and have a field office in Savannah.

These comments and questions serve as a supplement to our oral statement made at the public scoping meeting held in Atlanta, GA on December 12, 2001 (see attached).

Public Participation Concerns

CL-08/1 Georgians for Clean Energy remains concerned about the ability for the public to effectively participate in this and other nuclear related issues that impact Georgia's communities. Due to the tragic events of September 11th the Nuclear Regulatory Agency's (NRC) website was not available for a time and is currently severely scaled back, making public access to important background information very difficult or impossible. NRC staff mentioned at the public meeting on 12/12/01 that a full, top-to-bottom review of security concerns would be conducted. Georgians for Clean Energy urges that this review be done prior to the issuance of the final generic impact statement for decommissioning (GEIS).

CL-08/2 Given the difficulty in accessing thorough and accurate information, including potentially relevant material such as the relicensing documents on Plant Hatch in South Georgia, we feel it is important to both extend the public comment period until these documents can be made readily available and to provide more meeting locations to adequately gather public comments. Since

nuclear reactors will eventually be decommissioned in many states the public should be given more than just four locations nationwide to voice their concerns. Public meetings should also be held in communities neighboring currently existing nuclear power plants.

Georgians for Clean Energy promotes the shutdown of our unsafe nuclear power plants here in Georgia and the phase out of nuclear power nationwide. We also advocate for sound, systematic policymaking regarding decommissioning. We continue to oppose the NRC's method of handling nuclear industry issues "generically" and urge that site-specific environmental impact statements be conducted as each nuclear reactor approaches final shutdown.

Security

CL-08/3 In light of September 11th it is now abundantly clear that nuclear materials are desired by terrorist organizations. Our nation's operating nuclear power plants represent terrorist targets, but so too does the nuclear waste they 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 materials. 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. Georgians for Clean Energy again stresses the need for a full evaluation of security measures to be assessed prior to issuing a final GEIS.

Site-Specific Concerns

CL-08/4 Georgians for Clean Energy does not believe that a generic environmental impact statement (EIS) regarding decommissioning of nuclear facilities is a sufficient tool for evaluating impacts borne
CL-08/5 to specific environments from decommissioning a nuclear power plant. After the explanation by the NRC staff at the public meeting in Atlanta, we further disagree with 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 it is difficult to figure out how the NRC came to those characterizations even after NRC staff attempted to explain it at the public meeting in Atlanta. If the NRC unwisely chooses to continue using this classification system, Georgians for Clean Energy urges that, at a minimum, layman's terms be used to define the levels and the methods used to categorize the issues.

CL-08/6 Georgians for Clean Energy requests that the NRC require licensees undergoing or planning decommissioning to submit a new environmental assessment. We do not find it acceptable to give licensees the option of using "recent environmental assessments"

CL-08/7 Some nuclear plants, like Hatch, have overflowing volumes of nuclear waste that are now being
CL-08/8 stored outdoors which impacts the environment and could affect decommissioning. The NRC

has no experience in decommissioning nuclear reactors that have operated beyond the original
CL-08/9 40-year license period. Nor does the NRC have any experience decommissioning nuclear power plants that used plutonium bomb fuel, also known as mixed-oxide fuel (MOX). Again, these factors, among others, must be incorporated in addressing the decommissioning of individual facilities.

Economic Concerns

CL-08/10 Georgians for Clean Energy does not believe that the GEIS adequately addresses decommissioning costs. Though assurances were made at the public meeting in Atlanta that decommissioning funds are adequate, real-world examples have proved otherwise. For instance, in the current world of mega-mergers of electric utilities and sudden dissolution of energy giants such as Enron, there is little guarantee in place that companies will be able to pay for the full costs of decommissioning. Additionally, we are concerned that the method of decommissioning a nuclear power plant is determined more by the cost implications to the licensee than the overall ramifications of leaving a contaminated site for the local communities.

CL-08/11 An Associated Press news article from December 5, 2001, "Japanese power company begins dismantling country's oldest nuclear reactor," highlighted the enormous financial and technical concerns that Japan is facing regarding decommissioning, "Japan Atomic Power Co., which took the Tokaimura plant off line in 1998, won't begin taking apart the reactor for another 10 years because extremely high levels of radiation remain inside, said spokesman Eichi Miyatani. It will completely dismantle the plant by 2017 and spend an estimated 92.7 billion yen (US$748 million), Miyatani said." These monetary figures exceed those that were mentioned as average decommissioning cost estimates at the NRC's public meeting in Atlanta.

CL-08/12 Furthermore, a report issued this December by the United States Government Accounting Office, "NRC's Assurances of Decommissioning Funding During Utility Restructuring Could Be Improved--GAO-02-48," brings to light many concerns about the lack of adequate funding available for decommissioning activities. The following statement by the GAO makes it apparent that the NRC needs to improve, "However, when new owners proposed to continue relying on periodic deposits to external sinking funds, NRC's reviews were not always rigorous enough to ensure that decommissioning funds would be adequate. Moreover, NRC did not always adequately verify the new owners' financial qualifications to safely own and operate the plants. Accordingly, GAO is making a recommendation to ensure a more consistent review process for license transfer requests." (P.4)

CL-08/13 Georgians for Clean Energy requests that this extensive report be thoroughly reviewed by the NRC staff, be printed in it's entirety as an appendix in the final GEIS as the report did not come out before the draft GEIS was issued, and that the recommendations by the GAO be studied and incorporated into the final GEIS. Additionally, the public participation process should be

extended to allow for proper review of this important report.

CL-08/14 The GAO report also highlights several uncertainties relating to the costs of decommissioning:

> "Varying cleanup standards and proposed new decommissioning methods introduce additional uncertainty about the costs of decommissioning nuclear power plants in the future. Plants decommissioned in compliance with NRC's requirements may, under certain conditions, also have to meet, at higher cost, more stringent EPA or state standards. New decommissioning methods being considered by NRC, which involve leaving more radioactive waste on-site, could reduce short-term decommissioning costs yet increase costs over the longer term. Moreover, they would raise significant technical and policy issues concerning the disposal of low-level radioactive waste at plant sites instead of in regulated disposal facilities. Adding to cost uncertainty, NRC allows plant owners to wait until 2 years before their license is terminated—relatively late in the decommissioning process—to perform overall radiological assessments to determine whether any residual radiation anywhere at the site will need further clean-up in order to meet NRC's site release standards. Accordingly, GAO is recommending that NRC reconcile its proposed decommissioning methods with existing waste disposal regulations and policies and require licensees to assess their plant sites for contamination earlier in the decommissioning process. (P.4-5)

CL-08/15 Georgians for Clean Energy is also concerned about economic impacts to the local communities.
CL-08/16 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.

Environmental Comments

CL-08/17 Georgians for Clean Energy firmly believes 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. As we mentioned at the public meeting in Atlanta, there are already elevated levels of some radioactive contaminants nearly 100 miles downstream of Georgia's Plant Hatch and Plant Vogtle.

CL-08/18 We are still concerned that the NRC mistakenly poses 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, contribute to the degradation of our rivers and air. Georgians for Clean Energy would like to know how the NRC determined that an enormous project such as decommissioning an entire nuclear plant, which will involve the handling of

nuclear contaminated materials, would have a SMALL impact or air and water quality. We have already requested a copy of the analysis that was done to make this determination, and since we have not received that analysis yet we continue to urge that the NRC make this available to the general public and us.

CL-08/19 Additionally, a thorough analysis of groundwater impacts seems lacking. Given Georgia's current concern over the Floridan aquifer, we request that a site-specific assessment of groundwater quality be conducted prior to decommissioning. Also, we request that a more thorough analysis of groundwater issues be researched prior to issuing the final EIS. As an example, the NRC should request the most recent data from state agencies, such as the Georgia Environmental Protection Division, that are involved in negotiations regarding "water wars" between states—as in the ongoing dispute facing Georgia, Florida, and Alabama.

CL-08/20 Georgians for Clean Energy requests that the "rubblization" method of decommissioning be removed from the final EIS. 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. A point supported by the GAO report cited earlier in these comments. Georgians for Clean Energy does not promote the idea of shipping nuclear waste all over the country and recognizes that nuclear plant owners and the NRC 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.

CL-08/21
CL-08/22

CL-08/23 Georgians for Clean Energy also opposes any efforts by the nuclear industry or licensee of a decommissioning nuclear plant to "recycle" radioactive materials for release into the marketplace. No facilities should be able to sell their demolition debris. Instead, it should be dealt with as regulated nuclear waste since the bulk of the materials will be radioactively contaminated

Health & Safety Comments

CL-08/24 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, under no circumstances should future buildings, structures, etc. be built atop the former nuclear site.

CL-08/25 After the meeting in Atlanta, we are increasingly concerned about the safety of the workers that will be involved in decommissioning. Will a more specific analysis of worker effects be dealt with in the final EIS or is there a separate report that will research health impacts? Georgians for Clean Energy requests that all worker exposures that have occurred at nuclear power plants that are currently being decommissioned be made available to the public and listed in the final GEIS.

Low-Income Population Impacts

CL-08/26 Reactor sites are often contaminated to the extent that the location is made undesirable and unsafe for future economic development. As we stated at the public meeting in Atlanta, Georgians for Clean Energy urges that site-specific studies be conducted. For example, the economy of rural Georgia is much different from that of urban New York. How can these impacts be treated generically? Some nuclear power plants are in urban settings where economic impacts could be much different that in rural areas that have little or no other major employer in the region.

Questions:

CL-08/27
1. How will on-site, outdoor nuclear waste storage dumps, [also known as Independent Spent Fuel Storage Installations—ISFSI] like at Plant Hatch, be affected by decommissioning? How will the licensee of an ISFSI be impacted by events that may happen during decommissioning, i e. what if there is an accident nearby and the casks are damaged or the site is rendered inaccessible?

CL-08/28
2. How will the facility licensee, in our case, Southern Nuclear, benefit from later sale of the nuclear plant's land to a new owner? Also, how will the land be tracked after it's deemed "safe" and the licensee sells it...especially in cases where there may be a leak or a release of radiation into the environment after the initial sale occurred? For instance, isn't it in the best financial interest of the licensee, in our case Southern Nuclear, to use the fastest and least expensive decommissioning option so that the license can be terminated and they can sell the land before deficiencies can be found in the manner in which a plant was decommissioned?

CL-08/29
3. How is the funding of decommissioning costs guaranteed to be met by a company in a day and age where gigantic utility companies can collapse at any moment, as has recently happened with Enron?

CL-08/30
4. What legislation or regulations are in place to compensate communities, such as fisheries, farmers, etc. in cases of releases or accidents during or after decommissioning?

CL-08/31
5. What agency or governing body is responsible for monitoring the site after the decommissioning is deemed "complete"? How do the licensee and a government agency, such as the NRC, which is mandated to protect the public health, allowed to walk away from a site that will essentially remain radioactive forever?

Conclusion

CL-08/32 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. 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.

CL-08/33 CL-08/34 The NRC is charged to protect the quality of the human environment and we ask that they all can uphold that charge. The current draft GEIS is not protective and needs major improvement. We again stress the need for site-specific Environmental Impact Statements on decommissioning for nuclear power reactors. Our communities—from the people to the waterways—are unique and are entitled to nothing less.

Sincerely,

Sara Barczak
Safe Energy Director
Georgians for Clean Energy

Attachment

11/9/01
66 FR 56721
(9)

From: Lori Davis <davislj@dteenergy com>
To: <dgels@nrc gov>, <swb@nrc gov>, <elk1@nrc gov>
Date: 12/28/01 6 59AM
Subject: Comments on Draft Supplement to GEIS on Decommissioning

Good morning.

Please find attached a letter on "Comments on Draft Supplement to GEIS on Decommissioning" (Fermi letter NRC-01-0087, dated December 28, 2001).

Should you have any questions or comments, please advise Ms. Lynne S. Goodman, Manager, Fermi 1 (Detroit Edison), at 1-734-586-1205 (Should you have any problems with the document transmittal, please advise the sender)

Thank you

CC: Lynne S Goodman <goodmanl@dteenergy com>

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December 28, 2001
NRC-01-0087

Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T6D59
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Reference: 1.) Draft NUREG-0586, Sup 1, "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities, Draft Supplement Dealing with Decommissioning of Nuclear Power Reactors", dated October 2001

Subject: Comments on Draft Supplement to GEIS on Decommissioning

Detroit Edison appreciates the opportunity to comment on Reference 1.

CL-09/1 Overall, Detroit Edison agrees with the conclusions in the draft NUREG-0586, Sup 1. The supplement will be helpful and updates the previous Generic Environmental Impact Statement (GEIS) on Decommissioning to accommodate changes in regulations and experience gained in recent decommissioning activities. Detroit Edison does have specific comments on details in the document. The attachment to this letter details the comments. None of the comments should affect the overall conclusions in the supplement to GEIS.

If there are any questions on these comments, please contact Ms. Lynne Goodman at 734-586-1205.

Sincerely,

/s/

W. T. O'Connor, Jr.
Vice President, Nuclear Generation

WTO/LSG/ljd
Attachment
cc: S. W. Brown
E. Kulzer (NRC Region III)

Template = ADM-013

E-RIDS = ADM-03
Add = M. Masnik (MTM2)

D. Minaar (State of Michigan)
Regional Administrator, Region III
NRC Resident Office

Specific Comments on NUREG-0586, Sup 1:

CL-09/2 Abstract, p iii, lines 16-17 – add "explicitly" before "consider" in the 5th sentence. The original GEIS did not explicitly cover reactors except BWRs and PWRs. However, other reactors were not explicitly listed in what was not covered by the GEIS. Also, other reactors were listed in the table of decommissioning reactors in the original GEIS. They have been considered covered for activities described in the GEIS.

CL-09/3 Executive Summary, p xi, 3rd paragraph, 4th sentence, lines 31-32 – change to "It does not include research and test reactors or the decommissioning of reactors that were permanently shutdown as a result of an accident." This change provides consistency with the report and does not imply exclusion of all reactors that have been involved in an accident at some time during their operating history.

CL-09/4 Section 3.1, p 3-2, line 21 – the LaCrosse Boiling Water Reactor site is smaller than San Onofre. McGuire Nuclear Station has two operating reactors rather than three.

CL-09/5 Section 3.1.1, p 3-2, line 39 and 3-3, line 1 – Fermi 1 is in the final phase (decontamination and dismantling) of SAFSTOR.

CL-09/6 Section 3 1 1 3, p 3-4, lines 10-14 – delete 2nd sentence and modify 3rd sentence. The Fermi 1 FBR used uranium as its fuel. The information on uranium capturing neutrons to produce plutonium is correct. Breeding rates are dependent on the FBR's specific design.

CL-09/7 Section 3.1 1.3, p 3-5, line 1– add "commercial" before "FBR". The final decision on whether to permanently shutdown the FFTF, a DOE FBR, has not yet been announced.

CL-09/8 Section 3.1.2, p 3-6, lines 18-19 – The Fermi 1 Reactor Building is a steel domed structure. Below ground, there is considerable concrete shielding, but the building is not reinforced concrete.

CL-09/9 Section 3.1.3, p 3-8, line 32 – add "The systems described are typical and may differ at specific facilities." to end of the 1st paragraph.

CL-09/10 Section 3.1.3, p 3-10, line 7 – add "or similar document" following "(ODCM)", since limits may be in Technical Specifications rather than an ODCM. Also, the description of effluent systems should include mention of an evaporator, since some facilities use evaporation to convert liquid waste to gaseous and monitor their discharge.

CL-09/11 Section 3.1.3, p 3-13, last paragraph – shipment of contaminated apparatus or hardware may also occur to support specific activities.

CL-09/12 Section 3 1.3, p 3-14, lines 5-6 – shipment may also occur on barges or other ships.

CL-09/13 Section 3.2, p 3-16, lines 18-24 – the definition of SAFSTOR should more clearly define that it includes the final decontamination of the facility. This would be more consistent with definitions used elsewhere, such as in the original GEIS.

CL-09/14 Table 3-2, p 3-27 – add footnote "c" to Fermi 1. Detroit Edison informed the NRC in late 2001 per the requirements of 10 CFR 50.82, that the final decontamination and dismantling phase of SAFSTOR would be started for Fermi 1.

CL-09/15 Section 3.3.3, p 3-29 – sentences are duplicated between the three full paragraphs on p 3-29.

CL-09/16 Section 4.3.3.3, p 4-12, line 16 – there appears to be a discontinuity between the previous paragraph and the paragraph starting on line 16. Is something missing?

CL-09/17 Section 4.3 3.3, p 4-12, line 23 – pH would not necessarily (normally) be measured per the LTP. Also, while considerable attention is placed on minimizing spills during decommissioning, hazardous spills have occurred at decommissioning sites. The same types of activities as performed at operating units, which have resulted in spills at operating units, can lead to spills at decommissioning units. The likelihood is less since less water treatment and so less bulk chemical handling is typically performed at decommissioning sites.

CL-09/18 Section 4.3.3.3, p 4-12, lines 28-30 – add "The processing of residual sodium products from an FBR is no more likely to result in water quality impact than decommissioning activities at a LWR."

CL-09/19 Section 4.3.4.2, p 4-14, lines 11-24 – not all decommissioning sites have or will have building ventilation systems, especially those that are in SAFSTOR for many years. Temporary systems will be established, as needed, for gaseous and particulate effluents during decommissioning if installed systems are no longer functional.

CL-09/20 Monitoring of air quality is not necessarily performed during the storage period, depending on activities, storage period and source term.

CL-09/21 Section 4.3 4 3, p 4-15 – other activities during decommissioning could result in release of particulate matter. This includes temporary suspension of particles during cutting activities and production of particulates from processing of sodium and NaK at an FBR. Such particulate matter is filtered, as necessary, prior to release, to avoid or minimize adverse air quality impacts. While this is recognized on p 4-14, it should also be included in the section on "Results of Evaluation".

CL-09/22 Section 4 3.4 4, p 4-16, line 11 – add the following sentence to the end of the paragraph: "Particulates produced by decommissioning activities within buildings will be filtered as needed so that air quality impacts will be minimal."

CL-09/23 Section 4.3.9.2, p 4-34 – it is not clear whether the physical injuries discussed in this section are only those due to radiological impacts or due to non-radiological aspects of an accident. The section is on radiological accidents so the former is implied, but the wording is not clear.

CL-09/24 Section 4.3.9.3, p 4-35, lines 19-21 – the category of hazardous (non-radiological) chemical related accidents is listed here, which is appropriate since such accidents are possible during decommissioning. The description only mentions potential for injury to the public. However, in Section 4.3.9.2, which describes the classification of accidents as small, moderate and large, effects on workers are also discussed. This should be clarified since it appears to be inconsistent.

CL-09/25 Section 4.3.10.1, p 4-37 – the hazard of flames and fires should be addressed in the section on physical hazards.

CL-09/26 Section 4.3.10.1, p 4-39 – the following items should be added to the list of activities that expose workers to chemical hazards:

- Removal of chemical containing systems, such as demineralizers, and acid and caustic containing tanks
- Removal of sodium and NaK residues

CL-09/27 Section 4.3.10.2, p 4-40, lines 12-14 – in the paragraph on FBR decommissioning activities, add that decommissioning a FBR involves removal of sodium and NaK, but that these decommissioning activities can be performed safely with the proper engineering controls.

CL-09/28 Section 4.3.11.1, p 4-41, line 7 – add "LWR" before "licensee" in the third sentence. The formula for the specified minimum amount of decommissioning funds applies to LWR's. The other regulations on decommissioning funds and evaluation of adequacy do apply to all reactors, so there is no adverse impact of the formula applying only to LWR's

CL-09/29 Section 4.3.11.3, p 4-45, lines 4-5 – delete or reword "and is either undergoing decommissioning or is in safe storage awaiting decommissioning" from the second sentence. SAFSTOR or safe storage is a form of decommissioning.

CL-09/30 Tables 4-6 and 4-7, p 4-71 – footnote "d" is not used in the tables, but probably belongs next to the 960 value for the number of shipments from a PWR using SAFSTOR.

CL-09/31 Section 4 3 18 2, p 4-72, lines 38-41 – other irretrievable resources include gases and tools, but these resources are also minor.

CL-09/32 Section 6 1, p 6-1 – for plants shutdown before existing decommissioning rules were adopted, the environmental reviews may not be in the PSDAR as discussed in this section. In such cases environmental aspects not previously addressed that need to be addressed will be covered in the LTP.

CL-09/33 Tables E-3 and E-5
The issue of occupational hazards applies to activities in addition to those indicated in Table E-3. Since Table E-5 is based on Table E-3, it also needs to be revised to reflect the following.

Such additional activities that can affect or involve occupational issues are as follows. A brief explanation of why follows each item.

Adjust site training (Industrial safety type training needs to be continued and revised based on job hazards to ensure workers are trained for activities or areas [e g. confined spaces] involved in decommissioning)

Establish a reactor coolant system vent pathway (Depending on specific method, this could involve cutting, welding and working at heights)

Establish containment vent pathway (Depending on specific method, this could involve cutting, welding and working at heights)

Do preventive and corrective maintenance on SSCs (Maintenance activities at an operating plant or decommissioning plant can involve industrial hazards, some more so than others. There can be energized systems, pressurized fluids, rotating equipment, etc.)

Chemical decontamination (Occupational hazards include chemicals and pressurized fluids)

High pressure water sprays of surface (High pressure sprays are themselves a hazard due to energy involved. Precautions need to be taken to use them safely)

Cut out radioactive piping (Cutting typically involves torches or cutting wheels, creation of fumes or particles, and rigging)

Remove large and small tanks or other radioactive components from the facility (Careful rigging is needed to maintain control and prevent injury. If this activity also involves cutting the equipment free, the hazards of cutting are also involved)

LLW packaging and storage (Handling the LLW and packages needs to be performed

ergonomically safe to prevent injuries)

Large component transportation (The transportation issues all involve lifting of materials to remove them or bring them onto the site. Care also is needed if vehicle is backing up during the evolution.)

LLW transportation

Equipment into site transportation

Backfill tracked into site

Non-radioactive waste transportation

Complete final radiation survey (The survey will involve working at heights if buildings remain, and possibly accessing hard to reach locations.)

CL-09/34 Table F-1
The site area for Fermi 1 is listed as 1,120 acres. That is the size of the Fermi 2 site; Fermi 1 is on a portion of that site. The original Fermi 1 site was 900 acres. Currently, the portion of the site considered to be the Fermi 1 nuclear facility on the Fermi 2 site is less than 4 acres.

CL-09/35 Fermi 1's cooling water source was Lake Erie. Saxton's area is listed as 1.1 acres, however, the text reported San Onofre as having the smallest site. Also, footnote "b" should be applied to the "Cooling System" header, rather than "Cooling Water Source."

CL-09/36 Table F-2, p F-4 – Fermi is in Michigan, not Ohio.

CL-09/37 Section G.1.1.4 1, p G-5 – delete or revise fourth bullet. Conditions typically encountered in exposures from normal facility operations result in external dose, rather than internal dose. Internal deposition of particles can occur, but this is less common than external dose. Also, clarify last bullet.

CL-09/38 Section G 1.1 4 3, p G-8, lines 13-22 – this somewhat explains selection of the occupational nominal probability coefficient in Table G-4 for fatal cancers, but does not explain selection of hereditary coefficient.

CL-09/39 Table G-6, p G-11 – the table per its title covers dose limits for an individual member of the public under 10 CFR 20. The ALARA air emission dose constraint listed in the table is not a 10 CFR 20 limit.

CL-09/40 Section G 2 1, p G-13, lines 26-45 – the conclusion in the first sentence of the third paragraph

is misleading. The main reason that the occupational doses at reactors undergoing decommissioning are a small fraction of dose accumulated at operating facilities, as shown in Table G-9, is that there are many more operating plants than decommissioning plants. The average for decommissioning plants shown in the table is less than the operating plant, but not only a small fraction.

CL-09/41 It also is not clear how, why, and how many plants were selected for Tables G-11 and G-12. Additionally, the first sentence of the fourth paragraph should indicate that the data is estimated worker dose for major types of decommissioning activities. Actual data appeared to be listed for only one plant in the tables.

CL-09/42 Table G-12, p G-17 – the two numbers listed for San Onofre should be explained.

CL-09/43 Section G 2.1, p G-13 & G-19 – the conclusion reached that the doses for SAFSTOR and DECON are not substantially different is partly due to which decommissioning plants were selected to be evaluated.

CL-09/44 Table G-14 it appears strange that only 26-34 operating plants were listed as reporting dose from gaseous effluents each year, since all plants are required to report. Also, the selection of the years 1985-1987 appears strange for an update report.

CL-09/45 Section G.2.2, p G-21 – while the conclusion appears correct, it is strange that information was only available for a small sample of facilities. This data is reported to the NRC annually by licensees.

CL-09/46 Table G-15 – the basis of this table should be better explained. How were the plants selected? What years are covered?

CL-09/47 Table G-16 – how were the plants listed in this table selected? It appears to be a strange non-representative sample.

CL-09/48 Tables H-1 and H-2 – as addressed under comments on Tables E-3 and E-5, other activities involve occupational hazards.

Occupational issues do not seem to belong as an environment issue category. Safety of workers is considered as a separate category when planning work. From a regulatory perspective, OSHA and state agencies typically promulgate regulation on worker safety, not the EPA or state environmental agencies. The environmental issues typically are impacts to the air, water, or land both on and off site, while other environmental issues that impact people are evaluated for the public. The type of review is also different for occupational issues than other environmental issues. As each work package is planned, the hazards of the job need to be addressed in the planning and appropriate methods, engineering controls and

protective equipment planned and workers briefed for each activity. This is an immediate, short-term (for the duration of the activity) type of review, while most environmental issues have longer term implications.

However, if occupational issues are to be included in this environmental review, the additional activities discussed earlier also need to be included.

CL-09/49 Tables E-3, E-5, H-1 and H-2 – some additional activities, for example, system dismantlement and large component removal, could potentially impact air quality. Provisions are needed for portions of these activities to prevent adverse impacts.

CL-09/50 Table H-2, p H-17 – in the "Impact and Summary of Findings" section, "water use" should be changed to "air quality".

CL-09/51 Table I-5, p I-20 – add fire and hazardous materials to associated accidents for removal of contaminated pipe and tubing.

CL-09/52 Table I-5, p I-21 – add fire and hazardous materials to associated accidents for metal component dismantlement, intact removal or partial segmentation of large components and the first three subcategories of removal of reactor pressure vessel and internals.

CL-09/53 Table I-5, p I-22 – add fire to associated accidents for cut piping attachments. Add fire and hazardous materials to associated accidents for decontamination, segmentation and disposal of RCS and other larger bore piping.

CL-09/54 Table I-5, p I-23 – add fire to associated accidents for deactivate systems, disposal of nonessential structures and systems; establish a permanent reactor coolant system vent path; establish a permanent containment vent path; remove dedicated safe-shutdown diesel and generator; and remove unused equipment during SAFSTOR. Add hazardous materials to deactivate systems; disposal of nonessential structures and systems; drain and flush plant systems; process, package, and ship liquid and solid radioactive wastes; remove dedicated safe-shutdown diesel and generator; dispose of non-radioactive hazardous waste; and limited decontamination of selected structures and systems.

CL-09/55 In general, any activities that involve cutting or welding could lead to a fire. Precautions are implemented to minimize the possibility and respond quickly if a fire starts. Depending on the materials in the systems during operation or during earlier decommissioning activities, a hazardous materials accident is possible when removing systems, handling waste or using decontamination materials. Again, precautions are planned to minimize the possibility.

CL-09/56 Section J.1.1, p J-1 – add, "selected" before "facilities" in the first sentence of the first paragraph. Identify the time period used for the comparison in the second paragraph.

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CL-09/57 Table J-1 – add footnote "c" to Fermi 1.

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Page 11

CL-09/58 In conclusion, Detroit Edison thinks the draft supplement to the GEIS on decommissioning of nuclear facilities is a good effort and agrees with the overall conclusions. Some details should be revised to improve accuracy and to ensure planned decommissioning activities, intended to be covered by this supplement, are fully addressed. This will avoid future questions on whether activities are covered and/or bounded by this GEIS supplement.

11/9/01

46 FR 63721

(10)

From: adele kushner <adelek@alltel.net>
To: <dgels@nrc.gov>
Date: 12/29/01 6.48PM
Subject: NUREG-0586

Comments on Draft Supplement 1 to NUREG-0586, Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities.

CL-10/1 Although the alternatives proposed for decommissioning nuclear facilities all sound reasonable, the proposal in general has one major problem, which is the NRC's lack of credibility due to past errors and cover-ups.

CL-10/2 The present openness is most welcome, and a nice change, but past history hangs over NRC like a dark cloud.

CL-10/3 My direct experience is limited to having heard an eyewitness account of the decommissioning of Yankee Rowe This person reported a whole list of unfortunate incidents that released contamination into the air and groundwater, contaminating workers on site who were not wearing protective clothing, and possibly contaminating people along the rail and truck routes where parts of the plant were being transported.

CL-10/4 In addition, many reports of lost shipments of nuclear waste and materials, including fuel rods, in various parts of the country come to light, another hazard of transporting radioactive materials.

CL-10/5 Wherever human beings are involved, there are bound to be errors and accidents. The human element cannot be removed, as we found out at Three Mile Island and Chernobyl.

CL-10/6 Therefore, the safest alternative would be, first, to consider each reactor site individually rather than making a blanket policy to cover every site. Second, the lowest possibility of releasing contamination

CL-10/7 into the environment requires entombing radioactive structures, systems and components in a long-lived substance, maintaining and monitoring it, until the radioactive level is reduced to a safe level, which would take many years.

CL-10/8 This method would be the most likely to reduce exposure to workers and the public, and would not require workers familiar with the original construction

CL-10/9 Any of the methods proposed would require long time maintenance and monitoring, but keeping it in its original location would mean that the community would be familiar with it, it would be visible, and the community would be likely to care about its monitoring. In fact, involving the community in the whole process could utilize their experience and encourage their help.

CL-10/10 Allowing the licensee to choose the decommissioning method is not recommended, due to the usual pressures to cut costs despite the obvious dangers.

CL-09/11 ALARA is not a sufficient basis for judging proper methods.

CL-10/12 Thank you for holding these meetings in four locations around the country, and for encouraging public participation.

Adele Kushner, Executive Director
Action for a Clean Environment Inc.
319 Wynn Lake Circle, Alto GA 30510
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adelek@alltel.net

Template = ADM-013

E-RIDS = ADM-03

Add - M. Masnik (MTM2)

11/9/01
66 FR 65721
(11)

From: Debbie Musiker <dmusiker@lakemichigan.org>
To: "'dgeis@nrc.gov '" <dgeis@nrc gov>
Date: 12/31/01 11:10AM
Subject: Comments on DGEIS on Decommissioning of Nuclear Facilities

On behalf of the Lake Michigan Federation and the Environmental Law & Policy Center of the Midwest, please accept the attached comments regarding the Draft Supplement to the Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities, NUREG-0586.

Please contact Debbie Musiker if you have any difficulty opening the attached document or have any other questions. Thank you for your consideration.

Best regards,

Debbie Musiker
Lake Michigan Federation
dmusiker@lakemichigan.org
312-939-0838

Paul Gaynor
Environmental Law & Policy Center of the Midwest
pgaynor@elpc.org
312-795-3713

CC: "pgaynor@elpc org '" <pgaynor@elpc.org>

December 31, 2001

Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T 6 D 59
U S. Nuclear Regulatory Commission
Washington, D C. 20555-0001

Re: Comments on Draft Supplement to the Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities, NUREG–0586.

Dear Rules and Directives Branch Chief:

Please accept the following comments on behalf of the Lake Michigan Federation and the Environmental Law & Policy Center of the Midwest. The Lake Michigan Federation is a not-for-profit environmental organization that works to restore fish and wildlife habitat, conserve land and water, and eliminate pollution in the watershed of America's largest lake.

The Environmental Law & Policy Center is a Midwest public interest environmental advocacy organization, working, among other things to achieve cleaner energy resources and implement sustainable energy strategies.

CL-11/1 As a preliminary matter, we support the prompt decommissioning of nuclear power plants and urge the United States Nuclear Regulatory Commission ("NRC") to ensure that decommissioning goes forward in the safest, most environmentally sound manner.

In reviewing the Draft Supplement to the Final Generic Environmental Impact Statement (hereinafter, "Draft GEIS"), NUREG – 0586, we have several concerns.

CL-11/2
CL-11/3
CL-11/4

1. Considering the importance of the Great Lakes, which represent 20% of the world's freshwater supply, the NRC should prepare a site-specific impact analysis for the 18 nuclear facilities located on the United States side of the Great Lakes. The potential threat of a release along the shoreline or into the lake of radioactive material during decommissioning or storage of spent fuel requires special consideration. The Draft GEIS does not adequately consider the effects on aquatic ecology caused by an accidental, radioactive release.

Template = ADM-013

E-RIDS = ADM-03
Add = M. Masnik (MTM2)

CL-11/5
CL-11/6

Other aquatic environmental impacts also merit site-specific review. The location of intake and outfall structures in the lake alone requires site-specific analysis. As written, the Draft GEIS does not make clear whether an intake/outfall structure on the facility1 is considered part of a previously disturbed area If deemed part of the previously disturbed area, any work on the intake/outfall structure will be deemed generic and the impact small.

CL-11/7

Any work on or removal of an intake/outfall structure should trigger site-specific analysis. Indeed, the Draft GEIS explains that the removal of near-shore or in-water structures could result in the establishment of non-indigenous species to the exclusion of native species. DGEIS, 4-17. It also explains that in some cases wetlands will develop in areas where the construction of the facility alters surface drainage patterns. DGEIS, 4-18. The Draft GEIS suggests that site-specific analysis is appropriate in certain circumstances when the impact is beyond the previously disturbed area and when there is a potential to impact the aquatic environment. DGEIS, 4-19. The above examples of establishment of non-indigenous species or wetlands are exactly the types of impacts that require site-specific analysis. Yet, the site-specific analysis recommended may not cover these examples because they may occur within the previously disturbed area.

CL-11/8

Removal of intake/outfall structures may be the most beneficial action to the aquatic ecology, but it should not go forward without site-specific study of the environmental impacts.

CL-11/9

2. Sixty years is an arbitrary and inappropriate time period to allow a nuclear reactor to remain in SAFSTOR, where the contaminated facility will largely remain intact and spent fuel may remain on-site. According to NRC staff, **no technical basis** exists for this 60-year timeframe.2 See Transcript, December 6, 2001 Public Meeting, Drake Hotel, Chicago. First, if a company waits too long to decommission, it will lose its institutional memory and familiarity with the facility's structures because current workers may be deceased or otherwise unavailable. Such intricate knowledge of the facility is critical to avoiding radioactive releases during decommissioning.

CL-11/10

Second, we are concerned that over the course of 60 years, the ownership of nuclear plants, financial status of licensees, and decommissioning obligations for many plants could change; if companies have not operated the facility long enough to accrue sufficient funds for decommissioning, and then go into an extended SAFSTOR period, bankruptcy of the facility owner could jeopardize clean up at the site. The extended time of storage combined with reduced staffing associated with SAFSTOR could mean that these sites are more likely to be subject to accident, theft of equipment, or attack.

CL-11/11

Third, the Draft GEIS does not explain at what point in time radioactive decay of the material will make it sufficiently safe to proceed with any further dismantling. NRC should shorten the acceptable time period for SAFSTOR and link it to the timeframe that would make the material safer. NRC should encourage licensees to go forward with dismantling the facility under DECON as soon as appropriate, even if they start with placing the facility in SAFSTOR.

CL-11/12

3. The terrorist attacks of September 11, 2001 have raised many issues concerning the currently, inadequate security of our nation's nuclear reactors. Because decommissioning creates opportunities for release of spent fuel and structures contaminated with radioactive material, the Final GEIS should revisit the appropriate security needed during decommissioning. Indeed, under

CL-11/13

the current plan, facilities under SAFSTOR will have fewer personnel at the site even though the

1 If the intake/outfall structure is located off the facility, it is excluded from the Draft GEIS analysis and may not be given appropriate consideration.

2 Moreover, the 60-year period may be inconsistent with the explanation on page 1-6 of the Draft GEIS that spent fuel may be stored safely on-site for approximately 30 years after the licensed life of the facility.

radioactivity of the material will still be high. With less security, these facilities are at greater risk for attack.

CL-11/14

5. The NRC should be required to expressly approve a post-shutdown decommissioning activities report ("PSDAR") before a licensee initiates decommissioning activities Otherwise, the licensees have little incentive to perform a rigorous analysis of whether their decommissioning activities fit within the envelope of environmental impacts set forth in the GEIS Instead, they will likely assume they fit within the guidelines when they prepare their PSDAR. Moreover, a formal approval process should incorporate more opportunity for public input.

CL-11/15

6. The Final GEIS should directly indicate that licensees must obtain all necessary environmental permits prior to beginning the decommissioning process. Omitting this information may imply that the compliance with the requirements of this GEIS is adequate.

The Lake Michigan Federation and the Environmental Law & Policy Center of the Midwest urge the NRC to do more to protect the Great Lakes from the risks associated with decommissioning as it prepares the Final GEIS.

Respectfully submitted,

Debbie Musiker
Assistant Director, Special Initiatives
Lake Michigan Federation

Paul Gaynor
Staff Attorney
Environmental Law & Policy Center
of the Midwest

11/9/01

66 FR 65721

(12)

From: "Ed Martin" <edmartin@law com>
To: <dgels@nrc.gov>
Date: 12/31/01 2:29PM
Subject: Draft Supplement 1 to NUREG-0586

I attach hereto my supplemental comments on the above.

Thank you for your kind attention to this submission. Please do not hesitate to contact me if you have any questions. I look forward to hearing from you.

Sincerely,

Ed Martin

Sent by Law Mail

Ed Martin
ATTORNEY AT LAW

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December 31, 2001

Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T 6 D 59
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

By Electronic Mail

Re: Draft Supplement 1 to NUREG-0586

Ladies and Gentlemen:

CL-12/1

This will supplement my comments at the December 12 public meeting in Atlanta. As I noted at the time, I am concerned about the silence of the draft supplement on public participation in the decommissioning process. Commenters raised these concerns 18 months ago, but the draft supplement does not seem to address them.

CL-12/2

As I read the supplement, its effect will be to predetermine a number of issues about decommissioning of all public-utility power reactors. This will remove those issues from examination in trial-type proceedings, where licensees' evidence or the NRC's assumptions and conclusions could be tested and exposed to public scrutiny.

CL-12/3

Unless the public is allowed to intervene in decommissioning proceedings and participate fully in those proceedings, it cannot be certain that trustworthy decisions will result. Your 1996 brochure Public Involvement in the Nuclear Regulatory Process, NUREG/BR-0215, assures us that "the public has an opportunity to participate in NRC's decisionmaking process to . . . decommission a facility."

Public participation short of party-intervener status and review of less than all issues relevant to each plant seems to me a recipe for inadequate decisionmaking. If your agency restricts review, I believe you will be reneging on your promises to the public, as well as violating NRC's laws and regulations and the Administrative Procedure Act.

Thank you for the opportunity to supplement my earlier comments. I look forward to your response.

Yours very truly,

Template = ADM-013

E-RIDS = ADM-03

Add = H. Hasnik (HTM2)

11/9/01
66 FR 56721
(13)

From: shadis@prexar.com
To: <dgeis@nrc.gov>
Date: 12/31/01 5.31PM
Subject. COMMENTS on DECOM GEIS

Attached as Ms WORD FILE. Please aknowledge receipt. Thank You and Happy New Year. Ray

E-RIDS = ADM-03
Template = ADM-013 Add = M. Masnik (MJM2)

New England Coalition on Nuclear Pollution
VT . NH . ME . MA RI CT . NY
POST OFFICE BOX 545, BRATTLEBORO, VERMONT 05302

December 31, 2001

Chief, Rules and Directives Branch
Division of Administrative Services
Mail Stop T 6 D 59
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: NUREG – 0586 Draft Supplement 1, Generic Environmental Impact Statement on Decommissioning Nuclear Facilities, Draft Supplement Dealing With Decommissioning of Nuclear Power Reactors

Written Comments Prepared by Raymond Shadis on Behalf of the New England Coalition on Nuclear Pollution

CL-13/1

1. **Not Risk-Informed** - The U.S. Nuclear Regulatory Commission (NRC) has applied extraordinary effort to risk-inform reactor oversight but, save for Appendix G of this report, has avoided translation of environmental impacts from dose based-language to

CL-13/2

risk-based language. The US Environmental Protection Agency (EPA) and most state agencies that set radiation exposure standards employ measures, limits, or goals expressed in terms of risk. NRC Radiological Site Release Criteria appear to yield a higher risk to the public than those risk levels acceptable to EPA under CERCLA. If this is so, then the GEIS should contain the comparisons (risk to risk, nuclear to chemical, one in ten thousand to one in a million) in plain language. The presentation of risk in Appendix G is unnecessarily obtuse and murky. It appears not to contain a comparison to permissible or target risks from non-radiological pollutants, which in all fairness, it should.

CL-13/3

Appendix 1, Summary of Accidents For PWR and BWR Plants Undergoing Decommissioning Operations, Table 1-3 lists accidents considered in various individual plant evaluations but lists no potential consequences and no probabilities. So what good is this list except to show the random and will-nilly cafeteria approach to individual plants picking out and designing bounding accident scenarios? At one plant the limiting scenario is fuel handling accident; at another it is a fire in the low level waste storage building. Case in Point: No fire scenarios are listed for Maine Yankee under Table 1-3, yet recently a fire occurred in a low-level waste dewatering unit and burned a several hundred degrees for more than an hour. A local volunteer fire company approached the fire without respirators and without advice from radiation protection personnel. A GEIS should contain a comprehensive generic list of potential accidents (scenarios) together with probabilities and potential consequences.

CL-13/4

Presenting licensee estimates of consequences without comment or qualification as in

Table 1-4, Highest Offsite Doses Calculated for Postulated Accidents in Licensing Basis Documents, provides an incomplete picture of real potential consequences. For example, Maine Yankee asserts that loss of spent fuel pool heat sink will result in the same offsite dose as a liquid waste spill, that of .23 REM. Other than a reference to another study, NRC does not bother to explain what sort of dose spent fuel pool drain down might result in if remedial action is not taken. As dose consequences can be rather large, the actual figures should be included in the GEIS.

CL-13/5 **2. Impact of Closure** -The draft supplement attempts to reflect the impact of plant closure on jobs, community tax revenues, and population. The impact of reactor shutdown a must be considered apart from decommissioning. The decision to shutdown, to lay-off workers, to devalue the plant for tax purposes and so on, is not automatically a decision to decommission the plant. It may be a shutdown for a long-term repair or upgrade period. Or it may be intended to mothball the facility with the decision to decommission or not delayed a decade or more. In any case, if workforce reduction at shutdown is a part of decommissioning, then workforce replenishment because of fuel storage or enforcement of administrative site release conditions should also be considered.

CL-13/6 If decommissioning is to be risk-informed and the impacts of shut down are to be considered, then the cost and environmental and risk impacts of continued operation should also be compared. Maine Yankee shutdown rather than face the costs of steam generator replacement and correction of a host of safety defects, including system-wide cable separation issues, inadequate high energy line break protection, inadequate containment volume, marginal emergency diesel generator capacity, 95 percent of fire seals defective, undersized atmospheric steam dump valves, and on and on. Haddam Neck had similar problems. Just prior t the closure of Yankee Rowe, NRC staff was arguing internally about the sanity of permitting the plant to run one more fuel cycle with a badly embrittled reactor vessel.

CL-13/7 If the costs of the decision to shutdown are included, then the cost of the immediate alternative, repair and continued operation, ought to be included as well as comparative environmental impact and comparative risk.

CL-13/8 Table J-1 Impact of Plant Closure and Decommissioning at Nuclear Power Plants Currently Being Decommissioned includes three plants that have already passed from decommissioning to license termination. Maximum workforce and post termination workforce figures are scant, incorrect, misleading, and more or less, useless for the purpose of gaining usable information. Maine Yankee currently has more than 400 workers on site; not 295 as listed. Without a reference date, maximum workforce numbers mean what? During outages? During major repairs and retrofits? Of twenty-two plants listed, workforce figures are given for only seven.

CL-13/9 Table J-2 Impact of Plant Closure and Decommissioning on Population Change shows no causal relationship between closure, decommissioning and population change. Of twenty-one plant locations listed, all save two show population increases in the host county following plant closure. Did Rainer County, Oregon increase its population by 16.5 percent as an impact of the Trojan Nuclear Plant shutdown? It is even harder to credit that the impact of the closure of 65 MWe Humbolt Bay is an increase in the population of

California of 25.8 percent. This may be the stupidest table ever presented in an NRC document.

CL-13/10 Table J-3 Impact of Plant Closure and Decommissioning on Local Tax Revenues does not show any impacts of decommissioning activities on tax revenues there fore the table is incorrectly titled. There could be some small near term impact of decommissioning on tax revenues, for example, taxes levied on capital equipment purchased by local vendors working on decommissioning and taxes on spent fuel storage facilities.

CL-13/11 No effort is made to determine if marketability of local homes is increased by nuclear plant close. Marketability would determine price and ultimately impact tax-base.

CL-13/12 At sites considered for re-powering, no consideration is given to the tax worth of the re-powered site. Haddam Neck, for example, has applied for early partial site release so that the construction of a gas-fired plant may begin even before decommissioning is completed. Fort St. Vrain hosts a gas-fired plant. If impact of closure is to be considered in a GEIS on decommissioning, so then should reuse be considered.

CL-13/13 In Maine, utility ratepayers are entitled to share in moneys recovered from the sale of plant components and commodities, such as pipe and cable, as well as real estate and unspent decommissioning funds. While not taxes, per se, these are funds or credits added to the general public revenue.

CL-13/14 **3. Environmental Impacts** Section 4.3.8.2, Potential Radiological Impacts from Decommissioning Activities, fails to adequately consider the potential for decommissioning activities to spread or hide radiological contamination. The presumption is that accidents or mistakes will not take place, when experience at decommissioning plants shows that they do. The report fails to draw from this experience. For example, early in the decommissioning of one site and prior to complete radiological survey, a trench was dug across an impacted area to lay an electrical cable to power equipment no longer serviced through the plant. The trench was left open to the weather for a few days, then backfilled with loose material and thus could permit rainwater to carry contamination deeper and spread it further. Individually, such activities may not provide what are termed significant doses, but they have the potential to add incremental to the dose of future site occupants and overall risk and may violate ALARA principles. The potential environmental impacts of such activities should be evaluated. Incidents have occurred in which workers left the site with contaminated clothing and in which train car loads of class A waste were permitted to languish for weeks on a siding in a residential community. Although radiation levels in these instances were extremely low, the potential for greater exposures existed. Such scenarios should be considered, worst case, in preparing the GEIS.

CL-13/15 Section 4.3.11.2 Potential Impacts of Decommissioning Activities on Cost correctly points out that there are many variables in decommissioning that affect cost; among them are the size and type of reactor, the extent of contamination, property taxes and so on. However the GEIS does no more than list these variables without any attempt to assign the weight which any of them contribute. The GEIS correctly points out that only three commercial power reactors have successfully completed decommissioning, but does not

say that they can hardly be considered typical of those plants under and entering decommissioning. Fort St. Vrain was a modest sized plant of oddball High Temperature Gas design and decommissioned on a fixed price, loss-leader price by a large manufacturing firm, Shoreham only ran the equivalent of one full power day, and Pathfinder was a 59MWe peanut of a plant. Thus it would be instructive to look at how costs are apportioned among today's more representative plants currently under decommissioning and from this base, knowing which are sensitive to scale and which are sensitive to choice, project final costs. These costs should be broken down and compared in the GEIS.

CL-13/16 Section 4.3.16.2 Potential Impacts of Noise from Decommissioning Activities seems to deal with noise as significant only at hearing-loss levels, however the admission is made that noise can be annoying. It can also degrade the general environment, and the aesthetic environment, lead to sleep loss, diminished creativity, and lost sales of goods and property. Where decommissioning schedules require night work, large pneumatic hammers can be heard miles distant from the site. The GEIS should also consider noise from explosive demolition.

CL-13/17 Table 4-6 Radiological Impacts of Transporting LLW to Offsite Disposal Facilities is something of a puzzle. Waste volumes and radiological impacts in the table are much greater for the SAFSTOR decommissioning option (45,000 cubic meters/ 78 person-rem) than for the DECON option (10,000 cubic meters/ 48 person-rem). Same plant, if you let the radiation dissipate with time, you wind up with more waste. With all due respect, this makes no readily apparent sense.

CL-13/18 **3. Spent Fuel Storage** The GEIS does not consider the impacts of spent fuel storage. We believe this to be based on artificial distinctions. Both Maine Yankee and Haddam Neck have identified establishing an Independent Spent Fuel Storage Facility as a " critical pathway" in decommissioning. ISFSI construction has been regulated under the very same Part 50 license that will be terminated upon successful decommissioning. Only then will a Part 72 license be issued. The ISFSI is in the middle of a decommissioning site and physically inseparable from decommissioning. Its impacts should be considered among the impacts of decommissioning in the GEIS.

CL-13/19 **4. Exported Impacts** The on site disposal of radiological demolition debris (rubblization) is considered in the GEIS. With rubblization abandoned at Maine Yankee, the cumulative effect of disposal of the debris at a licensed facility elsewhere is not considered. This makes no sense. Nor does it make sense to "lose" impacts when contaminated materials are shipped to handling facilities for recycling. Different choices made at the decommissioning site will result in different impacts to workers and other citizenry offsite and away. These effects should not be artificially separated from the environmental impacts of decommissioning simply because they are exported.

Raymond Shadis - Post Office Box 76, Edgecomb, Maine 04556
(207) 882 – 7801 shadis@ime.net

From: Mark Oncavage <oncavage@bellsouth.net>
To: <dgeis@nrc.gov>
Date: 12/31/01 7:45PM
Subject: Decommissioning Comments

66 FR 65721
(14)

Dear Sir:

I am submitting the following comments to draft Supplement 1, NUREG-0586, Generic Environmental Impact Statement on Decommissioning Nuclear Facilities.

Sincerely, Mark P. Oncavage

Comments on NUREG-0586 Draft Supplement 1

by Mark P. Oncavage

CL-14/1 1. The evaluation of each nuclear plant site for radioactive contamination can only be done on a site-specific basis. Data of site contamination from Shoreham with zero years of operating experience cannot be compared with 33 years of operation at Big Rock Point and either of those sites can not be compared with a potential 120 years of Calvert Cliff operation or a potential 180 years of Oconee operation. Stating that, generically, all impacts of radioactive contamination from all sites are similar (P. 4-28), is simply wrong. The important concept underlying the Environmental Impact Statement for decommissioning nuclear plants is the health and safety of the public. The Nuclear Regulatory Commission Staff (NRC) is writing an EIS based on an unsupported assumption. The impacts of a nuclear plant site contaminated with radioactivity can be SMALL or MODERATE or LARGE, but the impacts are site-specific and are not similar nor generic.

CL-14/2 2. The evaluation of each nuclear plant plant site for radioactive contamination can only be done on a site-specific basis. The liquid low-level radioactive waste dump for St. Lucie 1 and 2 is the Atlantic Ocean, whereas the dump for liquid low-level radioactive wastes at Turkey Point 3 and 4 is a closed cooling canal system. The northern end of the canal system, Lake Warren, is the designated dump. If the sediments of Lake Warren and the cooling canals contain levels of radioactivity above those levels that are deemed safe for unrestricted human activity, then Lake Warren is one of the "safety-related structures, systems, and components" that needs to be decontaminated and dismantled. Lake Warren and the canals are also safety related as they function to mitigate the effects of a design basis accident by collecting and concentrating radioactive spills, dumped liquids, leachates, and site runoff. Other nuclear plants that dump their liquid radioactive wastes into closed waters will also require site-specific evaluations.

Template = ADM-013 E-RIDS = ADM-03
Cal = M. Masnik (MTM2)

CL-14/3 3. The evaluation of each nuclear plant site for radioactive contamination can only be done on a site-specific basis. In NUREG-0743, page 4-11, Turkey Point units 3 and 4 averaged 340 curies of radioactive solid waste per year. Twenty two years later NUREG-1437, Supplement 5, page 2-12 states that in 1999, units 3 and 4 shipped solid waste containing 834.3 curies per year, an increase of 145 %, yet Turkey Point is only 47 % through its potential operational life. Projections concerning the amounts of radioactivity in solid waste, gaseous waste, liquid waste, and site contamination appear to be pure guesswork with a potential operational life of 60 years per unit. For the NRC Staff to conclude that site contamination for all nuclear plant sites is generically similar and that the impacts to the human environment are SMALL, has no basis in fact. The NRC Staff needs to present the reasoning behind its projections to the scientific community for scientific scrutiny.

P-138

CL-14/4 4. Rubblization (p. 4-14), the breaking of contaminated concrete structures into gravels and blocks cannot be considered an option where:

A. the leachate plume could contaminate potable water,

B. the leachate plume could contaminate water used for food production such as farming, fishing, seafood harvest, or dairy,

C. the leachate plume could contaminate closed bodies of water such as cooling canals or cooling ponds, and

D. airborne particles could contaminate food crops, fishing waters, seafood harvesting waters, or dairy areas.

All contaminated building materials must be removed from the nuclear plant site.

CL-14/5 5. The Generic Environmental Impact Statement needs to specify inappropriate uses of decommissioning funds.

A. Using funds for temporary procedures, such as SAFSTOR, is inappropriate.

B. Using funds for the maintenance and monitoring of temporary procedures, such as SAFSTOR, is inappropriate.

C. Transferring funds from PSC/PUC control to licensee control is inappropriate.

D. Using funds for the temporary storage of spent fuel, such as ISFSI or PFS, is inappropriate.

E. Using funds for the settlement of bankruptcy claims is inappropriate.

F. Using funds as collateral is inappropriate.

G. All other uses of funds that do not directly result in the permanent cleanup of contaminated nuclear plant sites, is inappropriate.

Since the funds were obtained as an extra fee from ratepayers for the purpose of safely decommissioning nuclear plants, all of the funds need to be used for that purpose.

CL-14/6 6. The massive destruction of September 11th accomplished by the Al Qaeda terrorists has rendered the Waste Confidence Policy ineffective and obsolete. No reasonable person can be assured that high-level nuclear waste can be safely stored at plant sites under present conditions. The GEIS fails to consider the consequences of acts of terrorism and acts of war perpetrated by suicidal zealots against spent fuel facilities at decommissioned nuclear plant sites. This failure of the GEIS needs to be remedied.

CL-14/7 7. The GEIS needs to create a chronological list of all the decommissioning activities that accept public participation. All public participation opportunities such as meetings, hearings, oral comments, written comments, petitions, and

interventions need to be listed. At later times when specific dates are known, this list needs to be advertised locally in the affected area. The licensee should also solicit public input on the formulation of decommissioning plans well before the decisions are made.

Submitted
December 31, 2001

11/9/01
66FR 65721

15

From: "Sokolsky, David" <DDS2@pge.com>
To: "'dgeis@nrc.gov" <dgeis@nrc.gov>
Date: 1/2/02 5:29PM
Subject: FW: GEIS COMMENTS

<<FGEIS_comments1.doc>>
The above file represents Pacific Gas & Electric Company's revised comments to the draft Gerenic Envnonmental Impact Satement on Decommissioning of Nuclear Facilities, NUREG-0586, Supplement 1. The comments in the above file are identical to the comments previously sent to you on December 21; however, the previous comment on Section 4.3.4.2, page 4-13, is withdrawn because the FGEIS Scope states "... activities perfomed before permanent cessation of operations or impacts that are related to the decision to cease operations (for example, the impact from the loss of generation capacity) are outside the scope of the FGEIS." In this case the air impact of replacement power would/should have been addressed in the original EIR for SAFSTOR.

David Sokolsky
Supervisor of Licensing
Humboldt Bay Power Plant
Phone 707-444-0801
Internal 8-375-0801

> -----Onginal Message-----
> From: Sokolsky, David
> Sent: Friday, December 21, 2001 4:38 PM
> To: 'dgeis@nrc.gov'
> Cc: Moulia, Thomas; Nugent, Patnck
> Subject: GEIS COMMENTS
>
> <<FGEIS_comments.doc>>
>
> The attached WORD file contains Pacific Gas & Electnc Company comments on
> the draft Gerenic Envnonmental Impact Satement on Decommissioning of
> Nuclear Facilities, NUREG-0586, Supplement 1. If you have any questions
> on these comments, please contact me.
>
> David Sokolsky
> Supervisor of Licensing
> Humboldt Bay Power Plant
> Phone 707-444-0801
> Internal 8-375-0801
>
>

original Comment Ltr #7

CC: "Moulia, Thomas" <TAM1@pge com>, "Nugent, Patrick" <PxN2@pge com>, "Williams, Terry" <TJW3@pge.com>

Template = ADM-013

E-RIDS = ADM-03
Add = M. Masnik (MTM2)

PG&E COMMENTS TO FGEIS

DECEMBER 20, 2001

CL-15/1 • The last paragraph in the Conclusions section of the Executive Summary, and page 2-3 of Section 2.2.1, state that a licensee would have to submit a license amendment request if environmental assessments are outside the bounds of the GEIS or if the environmental impacts of a decommissioning activity have not been previously reviewed . What is the licensing document that should be modified in the license amendment request? Section 2.2.1 states the Environmental Report should be revised, but the PSDAR may be a more appropriate document.

CL-15/2 • Section 4.3.9.1, page 4-33, refers to the licensee's FSAR. Suggest adding the words "or equivalent" after "FSAR" since some licensees have a defueled safety analysis report (DSAR) instead of a FSAR.

CL-15/3 • Section 4.3.12.1, page 4-47, second line – Add a period after the word "effects" and begin the next sentence with the word "Socioeconomic."

CL-15/4 • The following Conclusions sections discuss environmental impacts that may have small, moderate or large impacts:

- 4.3.1.4 (Onsite/Offsite Land Use)
- 4.3.5.4 (Aquatic Ecology)
- 4.3.6.4 (Terrestrial Ecology)
- 4.3.9.4 (Radiological Accidents)
- 4.3.10.3 (Occupational Issues)
- 4.3.12.4 (Socioeconomics)

The FGEIS is not clear what, if any, actions a licensee should take depending on if the impacts are small, moderate or large?

CL-15/6 • Section 3.1.4, page 3-15, does not reflect that alpha-emitting Transuranic radioactivity is significant at some plants. This radioactivity is formed after failed fuel releases small amounts of Uranium (as well as fission products) to the reactor coolant. Subsequent activation of the Uranium results in the formation of Transuranic isotopes of Plutonium, Americium and Curium, most of which decay with alpha radiations. For the plants where this issue is significant, the production of airborne alpha radioactivity during decommisioning activities must be carefully controlled to avoid radiation exposure from inhaled alpha radioactivity.

December 21, 2001

11/9/01
66FR56721
(16)

Chief, Rules and Directives Branch
Division of Administrative Services
Mail Stop T 6 D 59
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

U.S. EPA Comments on Draft Supplement to Generic EIS for Decommissioning of Nuclear Power Reactors

Dear Sir/Madam:

In accordance with the National Environmental Policy Act (NEPA), Section 309 of the Clean Air Act, and the Council on Environmental Quality's implementing regulations (40 CFR 1500-1508), the Environmental Protection Agency (EPA) is providing you comments on the Draft Supplement (the Supplement) to the Generic Environmental Impact Statement (GEIS) for Decommissioning of Nuclear Power Reactors, dated October 2001 (NUREG-0586, Draft Supplement 1, CEQ #010416).

The Supplement updates the 1988 GEIS to reflect technological and regulatory changes and NRC's and licensees' experience with decommissioning nuclear power reactors. The environmental impacts described in the Supplement supersede those described in the 1988 GEIS. The Supplement may be used as a stand-alone document without need to refer to the 1988 GEIS.

CL-16/1 EPA supports the approach NRC has taken in the Supplement of establishing an *envelope* of environmental impacts resulting from decommissioning activities and identifying those activities which can be bounded by a generic evaluation and those which require a site-specific analysis. This approach concentrates the environmental analysis on those activities with the greatest likelihood of having an environmental impact. EPA also commends NRC for drafting a Supplement which facilitates public understanding in its use of plain English and explanation of technical terms.

As indicated below and in the enclosed detailed comments, EPA is requesting that NRC provide clarifications, supplementary information and explanations of certain conclusions found in the draft Supplement. EPA is therefore rating this Supplement as "EC-2", Environmental Concerns - Insufficient Information. A summary of the rating definitions is enclosed.

Template = ADM-013

E-RIDS = ADM-03
Add = M. Masnik (MTM2)

CL-16/2 EPA's major comments on the Supplement are: (1) it is not always clear when a particular decommissioning activity or site/operating condition falls within the envelope of environmental impacts described in Section 4 and when that activity or condition would require
CL-16/3 further analysis; (2) the Supplement should distinguish better among certain of the small, moderate and large impact levels and better explain certain assumptions used in setting these
CL-16/4 levels; (3) the Supplement should address how the environmental analysis of decommissioning activities takes into account changes in the environmental parameters of the site during plant
CL-16/5 operation; and, (4) the Supplement should provide a more robust discussion of ground water impacts. Further detail on EPA's concerns is found in the enclosed "Detailed Comments."

Thank you for the opportunity to review this document. If you have any questions or would like to meet to discuss our concerns, please contact Susan Absher of my staff. She may be reached at (202) 564-7151.

Sincerely,

/s/

Anne Norton Miller
Director
Office of Federal Activities

Enclosures: 2
Summary of Rating Definitions
Detailed EPA Comments on the Draft Supplement to the GEIS

11/9/01
66 FR 56761
16

Summary of EPA Rating Definitions

EPA's rating system was developed as a means to summarize EPA's level of concern with a proposed action The ratings are a combination of alphabetical categories that signify EPA's evaluation of the environmental impacts of the proposal and numerical categories that signify an evaluation of the adequacy of the EIS

Environmental Impact of the Action

"LO" (Lack of Objections) The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal

"EC" (Environmental Concerns). The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts

"EO" (Environmental Objections). The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative. EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory) The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality EPA intends to work with the lead agency to reduce these impacts If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ

Adequacy of the Impact Statement

"Category 1" (Adequate) EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information) The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate) EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

Template = ADM-013

E-RIDS = ADM-03
Cdd - M. Masnik (MTH2)

1

Detailed EPA Comments on
Draft Supplement to Generic EIS for Decommissioning of Nuclear Power Reactors
(NRC NUREG-0586, Draft Supplement 1, October 2001)

General Comments

CL-16/6 1. The Supplement should provide more specific guidance to licensees regarding the level of a particular decommissioning activity, or the site conditions in which an activity is occurring, which would trigger a site-specific NEPA analysis of the activity by the licensee. For example, with regard to levels of activity that would require a site-specific analysis, the Supplement should more specifically define what constitutes a major transportation upgrade. With regard to site conditions, it should define how much time may pass after the previous disturbance of an aquatic or terrestrial ecosystem before a site-specific analysis is necessary, or how recent the ecological assessment of that ecosystem must be to rely on the Supplement instead of a site-specific analysis. This will facilitate both licensees' evaluation of environmental impacts in required submissions such as the Post Shutdown Decommissioning Activities Report (PSDAR) and the License Termination Plan (LTP), and NRC's development of site-specific NEPA documents.

CL-16/7 2. In order to provide a complete and up-to-date environmental profile of the site, the Supplement should direct licensees to summarize the following in their site-specific NEPA analyses (and as appropriate in the PSDAR and LTP) (a) pre-plant construction environmental reports (for plants constructed before the enactment of NEPA) and environmental impact statements (EISs) regarding the impacts of plant construction and operation, (b) environmental reports and/or assessments that were prepared during the period the plant was in operation regarding the impacts of plant operation, (c) significant requirements and changes in the licensee's environmental permits, and (d) changes in the environmental parameters of a facility site during operation and the impacts of any such changes (see also Response to Comment #6-A, page A-11).

CL-16/8 3. Response to Comment No. 6-C, page A-13, indicates that impacts from potentially contaminated sediment are addressed in the Supplement, but we did not find this information.

CL-16/9 4. While EPA did not identify security issues during the GEIS scoping process, the events of Sept. 11 have brought them to the forefront of public concern. EPA suggests that NRC include in the final Supplement a general discussion on how the Commission is addressing security from terrorism at plants undergoing decommissioning.

CL-16/10 5. The Supplement (page 3-16) indicates that ENTOMB is still considered a viable option for decommissioning. Section 3 2.3 notes that the Supplement includes a bounding analysis, but that any environmental issues arising from a subsequent rulemaking on ENTOMB will be addressed in that rulemaking and its supporting environmental documentation. EPA urges NRC to consider in any subsequent analysis of EMTOMB the issue of residual dose and the potential need for state approval of any de facto disposal.

Executive Summary

CL-16/11 6 Page xv, Lines 37-38. The document identifies certain issues that are "site-specific for activities occurring outside the disturbed areas in which there is no recent environmental assessment." "Recent" should be defined by, for example, specifying a time frame or "shelf life" for environmental assessments, so that licensees have clear notice of when they must prepare or update such a document for the disturbed area(s) in question. This same problem arises in Table ES-1, which refers to "current" and "recent" ecological assessments.

Introduction

CL-16/12 7. Page 1-5, Section 1.3. This section states that except for decommissioning planning activities, the Supplement only considers activities following removal of the fuel from the reactor. The exclusions include "impacts that result directly and immediately from the act of permanently ceasing operations" such as the environmental impacts of ceasing thermal discharges to receiving waters which the Supplement states "is essentially a restoration of existing conditions." This ignores the potentially adverse effects that the thermal discharges may have had on the ecosystem while the plant was operating; and, while the affected ecosystem may recover from the thermal discharges, such recovery may not be the equivalent of restoration to the originally existing conditions. Also, a species may have become established and dependent upon the thermal discharge.

CL-16/13 8. Page 1-7, Section 1.3, Lines 30-33. The document needs to explain the grounds for the determination that the environmental impacts of concrete leaching into site groundwater as the result of rubblization can be evaluated generically. See also groundwater comments below.

CL-16/14 9. Page 1-8, Lines 10-13 EPA agrees that inadvertent releases resulting from an accident should be handled on a site-specific basis. We would like to see an explanation of how the analysis of impacts from an accident would be handled.

CL-16/15 10. Page 1-8, Section 1.4. EPA encourages NRC wherever possible to make the Levels of Significance (small, moderate and large) used in the Supplement more definitive by including risk ranges, referencing the appropriate NRC regulations or providing examples of impacts. We note that in several cases the qualitative analysis is given in units of person-rem with no regulatory limit provided.

CL-16/16 11. Page 2-5, Section 2.2, Line 10. This section should note that state or local requirements may be more restrictive than NRC's.

Description of the NRC Licensed Reactor Facilities and the Decommissioning Process

CL-16/17 12. Page 3-5, Section 3.1.2, Lines 31-33 and Page 3-8, Lines 13-16. The document states on page 3-5 that "the impacts of dismantling all SSCs (structures, systems and components) that were built or installed at the site to support power production are considered in this Supplement." It then states on page 3-8 that the Supplement does not evaluate switchyards which "may remain on the site". If they are dismantled, would they be evaluated?

CL-16/18 13. Page 3-10, Section 3.1.3, Lines 32-25. The supplement states that "the amount of liquid and gaseous radioactive waste generated is usually lower for decommissioning plants". Must the plant's waste remain within the limits established during operations to be bounded by this GEIS?

CL-16/19 14. Page 3-11, Section 3.1.3, Lines 17-18. Please revise the document to clarify that Resource Conservation and Recovery Act hazardous waste disposal permits and Clean Water Act NPDES permits are administered either by EPA or, where EPA has authorized the state RCRA program or the state has assumed the NPDES program, by the state. (See NUREG 1628, Question 4.2.2) Also, the text should briefly discuss the management of PCBs and PCB-containing materials under the Toxic Substances Control Act.

CL-16/20 15. Page 3-16, Section 3.1.4, Line 1. This line notes that spent fuel comprises the largest amount of radioactive material at a shutdown facility. It would be informative to include here a summary of or reference to the data in Appendix G on the amount of radioactive material at various types of power plants.

CL-16/21 16. Page 3-17, Section 3.2.1, Lines 32-33. Please revise the document to clarify that while the evaluation of ISFSIs is outside the scope of the GEIS, it should be noted that the DECON alternative does not necessarily completely eliminate the need for long-term security and surveillance of a facility; an ISFSI at a decommissioned facility will require long-term security and surveillance.

CL-16/22 17. Page 3-29, Lines 29-39 repeat lines 11-21.

Environmental Impacts

Land Use

CL-16/23 18. Page 4-6, Section 4.3.1.2, Lines 15-16. This section defines a previously disturbed area as an area where land disturbance occurred "during construction or operation of the site." This definition may allow licensees to undertake decommissioning activities resulting in adverse environmental impacts without first performing a site-specific analysis of those impacts. For example, it might allow a licensee to disturb an area that was disturbed several decades ago during plant construction even if that area was not used during plant operation and has essentially returned to its original condition, i.e., native species have fully returned. The Supplement should define what constitutes a "previous" disturbance, e.g., by specifying a time frame, so such adverse impacts are not permitted to occur.

CL-16/24 19. Page 4-6, Section 4.3.1.2, Lines 25-29. The following terms are too broad or too vague to provide licensees sufficient guidance about when a site-specific analysis is necessary: with regard to SMALL impacts, "very little new development" and "minimal changes"; with regard to MODERATE impacts, "considerable new development" and "some changes"; and with regard to LARGE impacts, "large-scale new development" and "major change." Providing specific examples from decommissioning or decommissioned facilities would be very useful.

CL-16/25 20. Page 4-6, Section 4.3.1.3, Lines 33-41. Using NUREG-1437's estimate that ~1 to ~4 ha (~2.5 to 10 ac) of land is needed for steam generator replacement activities, the document assumes that the land use impacts of major component removal during decommissioning "should be similar or less," and that the land used during major component removal "[g]enerally ... has been previously disturbed during construction of the facility." Does this mean that a licensee must perform a site-specific analysis of impacts if the land use impacts of major component removal may or will

be greater than the estimated impacts of steam generator replacement, or if the land used during major component removal has not been previously disturbed during construction of the facility?

CL-16/26 21. Page 4-7, Section 4 3 1.3, Lines 1-2. The Supplement notes that "almost all of the sites" will use land previously disturbed during construction; should one assume that a facility using land not previously disturbed will need to conduct a site-specific analysis? Similarly, under "Conclusions" on that page, it states that impacts for "offsite land use" are considered small unless "major transportation upgrades are necessary." The examples given are establishing water, rail or road transportation links. Is one to assume that any establishment of offsite transportation would require a site-specific analysis? Would impacts only be to off-site land uses or to on-site as well? Specific examples would help here.

CL-16/27 22. Page 4-7, Section 4.3.1.3, Lines 10-12. Please explain the basis for the assumption that where previously disturbed areas are not large enough to support decommissioning activities, "it is likely" that the impact of disturbing previously undisturbed areas would be "temporary and SMALL."

Water Use

CL-16/28 23. Page 4-9, Section 4.3 2.2, Lines 12-14. The Supplement should briefly describe the "common engineering practices to limit water use impacts." When describing how water impacts were evaluated (sec. 4.3.2.3.), it would be helpful to include the average and maximum water usage pre- and post-operation of those plants that have ceased operation.

Water Quality

CL-16/29 24. Pages 4-10 through 4-12, Section 4.3.3. This section focuses primarily on the water quality impacts of nonradiological discharges from point sources to surface water (and the regulation of such discharges under the NPDES program). It should more fully discuss the water quality impacts of both nonradiological discharges to groundwater (and their possible regulation under state programs) and non-point source pollution, and if necessary should indicate that one or both of these types of impacts require site-specific analysis. All of these types of discharges have potential water quality impacts that need to be evaluated.

CL-16/30 25. Pages 4-10 to 4-11, Section 4 3.3 1. This subsection on water quality regulations should distinguish between "intentional" and "unintentional" nonradiological discharges to both surface water and groundwater. As currently drafted, the section blurs these distinct types of discharges, and the regulatory schemes relevant to each.

CL-16/31 26. Page 4-10, Section 4 3 3.1, Line 42. The Supplement refers to a "permitting authority" before it identifies what type of permit is at issue. As a result, the reader does not know who the permitting authority is. It would be helpful to note that "intentional releases of non-radiological discharges" to surface waters are regulated under EPA or state wastewater discharge permitting programs, and such discharges to groundwater may be regulated under state programs.

CL-16/32 27. Page 4-10, Section 4 3 3 1, Lines 41-44 and Page 4-11, Lines 1-2. This paragraph is confusing in light of the statement on Page 4-12 "that the issue of surface or groundwater quality for all decommissioning activities is generic and that the environmental impacts for these activities will

be SMALL." As currently written, it suggests that NRC will obtain a permitting authority's "environmental assessment of aquatic impacts" and "consider the assessment in its determination of the magnitude of the environmental impacts" of decommissioning activities at individual sites. It also suggests that NRC will "establish its own impact determination[s]" on a site-specific basis in the absence of such environmental assessments. Please clarify.

CL-16/33 28. Page 4-11, Section 4.3 3.1, Lines 4-5. Please revise the Supplement to indicate that the NPDES program only regulates point source discharges to surface waters, not discharges to groundwater or non-point source pollution. (See also section 4.3.3.4) As noted above, the document should note that point source discharges to surface waters also may be regulated under state wastewater discharge permitting programs, and discharges to groundwater may be regulated under state programs.

CL-16/34 29. Page 4-11, Section 4.3 3.1, Lines 7-9 and Section 4.3.3.2, Line 16. The document assumes that facilities' NPDES permit limits during decommissioning "are generally the same limits that are enforced for an operating plant," that facilities' permits "may require a monitoring program," and that "these monitoring programs are usually continued through the decommissioning period." Should the reader assume that a licensee must perform a site-specific analysis of water quality impacts if any one of these conditions is not met? If not, why not? (See also section 4.3.3 4: is a site-specific analysis required where discharges to surface water may or will exceed the NPDES-permitted levels? Again, if not, why not?)

CL-16/35 30. Page 4-11, Section 4.3.3.2, Lines 17-18, 21-23. This language could be interpreted erroneously to indicate that discharges to groundwater are monitored under NPDES permits. The Supplement should address the water quality impacts of decommissioning activities on groundwater separately from the impacts on surface water. In lines 34-35, the Supplement should describe the conditions in which nonradiological impacts to groundwater and from non-point source pollution may be considered SMALL, MODERATE or LARGE.

CL-16/36 31. Pages 4-11 to 4-12, Section 4.3.3.3.
The discussion in this section could support a requirement for licensees to perform site-specific analyses of the potential water quality impacts of their decommissioning activities under certain circumstances; notably, language such as performing these activities in different orders can have a "significantly different impact on water quality," that the SAFSTOR option "may exacerbate water quality issues," and that certain activities "may result in changes in local water chemistry" implies the potential need for site-specific analysis.

In particular, the statement that rubblization may affect groundwater pH and thereby "affect the transport properties of radioactive and nonradioactive chemicals in the subsurface" appears to require a site-specific analysis. The document notes in other places (e.g., Page 1-7, Lines 26-33) that the nonradiological impacts of rubblization, including concrete leaching into groundwater, can be evaluated generically. Section 4.3.3.3 does not support this conclusion.

CL-16/37 32. Page 4-12, Section 4.3.3.3, Lines16-17. The Supplement states that unintentional releases of hazardous substances historically have been infrequent at decommissioning facilities, and that except for a few substances, hazardous substances spills are "localized, quickly detected, and relatively easy to remediate." Does this mean that a licensee must perform a site-specific analysis of potential water quality impacts if a hazardous substance is spilled or otherwise

released to the environment during decommissioning. How is "hazardous substance" defined? Examples or a better definition of "localized", "quickly detected" and "ease of remediation" should also be provided.

CL-16/38 33. Page 4.12, Section 4.3.3 4. As noted above, the NPDES program only regulates nonradiological discharges to surface waters from point sources, not discharges to groundwater. This subsection should also draw conclusions about the potential water quality impacts of nonradiological discharges to groundwater and non-point source pollution during decommissioning.

CL-16/39 34. Page 4-14, Section 4.3.4.2, Lines 6-8. The Supplement states that emissions from workers' vehicles "should be lower" during decommissioning than during plant construction or outages and are "usually lower" than during plant operation. Is there any data from decommissioned plants to support these statements? Also, does one assume that a site-specific analysis of potential air quality impacts is required if such emissions may or will be higher than during plant construction, outages or operation?

CL-16/40 35. Page 4-14, Section 4.3.4.2, Lines 10-24. The Supplement states that most decommissioning activities are conducted in facility buildings with systems that are "typically maintained and periodically operated" during decommissioning to minimize airborne contamination. As a result, "materials released when systems are dismantled and equipment is removed are not likely to be released to the environment in significant quantities." Again, does the reader assume that a licensee must perform a site-specific analysis of potential air quality impacts if a certain level (definition?) of decommissioning activity may or will not be conducted in facility buildings, or if the systems used to minimize airborne contamination may or will not be maintained and/or operated according to a certain level of effort? How is "significant quantity" defined?

CL-16/41 36. Page 4-14, Section 4.3 4.2, Lines 26-33. The Supplement states that fugitive dust emissions during movement of equipment outside of facility buildings are "likely ... to be confined to the immediate vicinity of the equipment," "in general ... limited to a small number of events" and "of relatively short duration." Again, is the reader to assume that a licensee must perform a site-specific analysis of potential air quality impacts where one of these conditions is not met? Also, how are "immediate", "small number of events" and "relatively short duration" defined? Further, must the facility employ mitigation measures to minimize dust; if so, where are these specified?

CL-16/42 37. Page 4-14, Section 4.3.4 2, Lines 40-43 and Page 4-15, Section 4 3.4.2, Lines 1-2. The Supplement states that there is an average of less than one shipment per day of low-level waste (LLW) from a decommissioning plant; that, "in most cases, the number of shipments of other materials to and from a decommissioning facility will be less than that for LLW;" and that therefore emissions associated with the transportation of materials from such a plant "are not expected to have a significant impact on air quality." Again, is the reader to assume that a licensee must perform a site-specific analysis of potential air quality impacts if the number of shipments of materials to or from its decommissioning facility will exceed the level of less than one shipment per day?

CL-16/43 38. Page 4-15, Section 4.3 4 2, Lines 4-7. The definition of what constitutes SMALL, MODERATE and LARGE air quality impacts would be helped by providing specific examples from decommissioning or decommissioned facilities.

CL-16/44 39. Page 4-15, Section 4.3.4.3, Lines 21-23. This section states that "[n]o anticipated new methods of conducting decommissioning and no peculiarities of operating plant sites are anticipated to affect this pattern" of managing fugitive dust. Is the reader to assume that a licensee who proposes using a new decommissioning method must perform a site-specific analysis of potential impacts?

Aquatic Ecology

CL-16/45 40. Page 4-16, Section 4.3.5, Lines 25-29. This section's discussion of impacts to aquatic resources following plant shutdown seems to contradict the example given on page 1-5, lines 6-7, of plant discharges post-shutdown being outside the scope of this document. Similarly, the discussion at Page 4-19, Section 4 3.6, Lines 26-29 seems to contradict page 1-5. Note also the comment above on the page 1-5 language.

CL-16/46 41. Page 4-17, Section 4.3.5.2, Line 38 and page 4-18, Section 4 3 5 2, Lines 4 and 14. The term "previously disturbed" needs definition.

CL-16/47 42. Page 4-18, Section 4.3.5.2, Lines 14-17. The Supplement should provide specific guidance on how to weigh the primary factors to be considered in evaluating the adverse impacts of decommissioning activities in "previously disturbed" areas. How much habitat can be disturbed before a site-specific analysis is required? How much time can have passed since the initial disturbance? How is a licensee to evaluate the successional patterns of the aquatic communities?

CL-16/48 43. Page 4-18, Section 4.3.5 2, Lines 17-23. The Supplement states that the potential impact of disturbing areas beyond the original construction area is SMALL and can be characterized generically if "the aquatic environment has been characterized," and that a site-specific analysis is needed if "decommissioning activities occur in aquatic environments have not been characterized." What must this characterization consist of, and when and how recently must it have been performed, to allow a licensee to conclude that it is sufficient and can properly support the conclusion that potential impacts are SMALL?

CL-16/49 44. Page 4-19, Section 4.3 5 4, Lines 4-6. This subsection appears to define a "previously disturbed area" as "within the security fences or surrounding paved, graveled, or otherwise developed areas without removal of near-shore or in-water structures." Does this definition also apply to land use activities on page 4-6, Section 4.3.1.2, Lines 15-16? Does the definition mean that a licensee who plans to remove near-shore or in-water structures in "previously disturbed areas" must perform a site-specific analysis of the potential aquatic ecology impacts?

CL-16/50 45. Page 4-19, Section 4.3.5.2, Lines 8-11. How is "previous" defined? What is the relationship between these "previous ecological surveys that indicate a low probability of adversely affecting ecological resources" and the aquatic environment characterizations referred to on Page 4-18, Lines 17-23? This subsection suggests that the aquatic ecology impacts of decommissioning activities conducted in areas that were not "previously disturbed" will be SMALL if a previous survey has demonstrated a low probability of adverse effects on the ecosystem, while Section 4.3 4 2 suggests that the aquatic ecology impacts of decommissioning activities in such areas will be SMALL if a characterization has demonstrated the possibility of some adverse effects to "sensitive resources," but the facility will manage those resources for their protection during

decommissioning activities.

CL-16/51 46. Page 4-19, Section 4.3.5.2, Lines 11-16. The Supplement should define more precisely the circumstances under which a site-specific analysis of potential aquatic ecology impacts in previously undisturbed areas is required. How is the licensee to determine whether an activity has the potential to impact the environment? How should the magnitude of potential impacts be determined? Also, can a licensee avoid doing a site-specific analysis by implementing a protection plan to protect the aquatic environment?

Terrestrial Ecology

CL-16/52 47. Page 4-21, Section 4 3 6.2, Lines 1, 15 and 24. The term "previously disturbed" should be defined or examples provided.

CL-16/53 48. Page 4-21, Section 4.3.6 2, Lines 15-17. The Supplement should provide specific guidance on how to weigh the primary factors to be considered in evaluating the adverse impacts of decommissioning activities in "previously disturbed" areas. How much habitat can be disturbed before a site-specific analysis is required? How much time can have passed since the initial disturbance? How is a licensee to evaluate the successional patterns of the native communities?

CL-16/54 49. Page 4-21, Section 4.3.6 2, Lines 23-25. What is a "significant" terrestrial resource? What does "potentially" affected mean? These terms need to be defined or examples provided so that licensees understand when they are required to perform a site-specific analysis.

CL-16/55 50. Page 4-21, Section 4.3.6 2, Lines 25-29. The document states that the potential impact of disturbing areas beyond the original construction area is SMALL and can be characterized generically if "the terrestrial environment has been characterized." Moreover, a site-specific analysis is needed if "decommissioning activities occur in terrestrial environments that have not been characterized." What must this characterization consist of, and when/how recently must it have been performed, to allow a licensee to conclude that it is sufficient and can properly support the conclusion that potential impacts are SMALL?

CL-16/56 51. Pages 4-21 to 4-22, Section 4.3.6.3. The document assumes that "[i]n most cases, the amount of land required to support the decommissioning process is relatively small and is normally a very small portion of the overall plant site." It also states that "licensees typically anticipate utilizing an area of between 0.4 ha (1 ac) to approximately 10.5 ha (26 ac) to support the decommissioning process." EPA assumes this means that a licensee must perform a site-specific analysis of impacts if the terrestrial ecology impacts of decommissioning activities may or will be greater than 10.5 ha (26 ac). If this assumption is incorrect, when is a site-specific analysis is required and why?

CL-16/57 52. Page 4-22, Section 4.3 6 3, Lines 27-29. The document assumes that the "activity of rubblization of construction material should not have significant nonradiological impacts beyond other decommissioning activities except for potential short-term noise and dust effects." However, on Page 4-12, the document states that rubblization may affect groundwater pH and thereby "affect the transport properties of radioactive and nonradioactive chemicals in the subsurface." Any radioactive or nonradioactive chemicals in the subsurface that are mobilized as a result of concrete leaching from rubblized material could have an adverse effect on the terrestrial ecology

of a facility. For this reason, EPA recommends that the Supplement require a site-specific analysis of all of the potential environmental impacts of rubblization, both nonradiological and radiological.

CL-16/58 53. Page 4-22, Section 4.3.6.4, Lines 37-39. This subsection appears to define a "previously disturbed area" as "within the security fences or surrounding paved, graveled, or otherwise developed areas." How does this definition relate to the definition provided on Page 4-6, Section 4.3.1.2, lines 15-16?

CL-16/59 54. Page 4-22, Section 4.3.6 4, Lines 40-43. This subsection suggests that the terrestrial ecology impacts of decommissioning activities conducted in areas that were not previously disturbed will be SMALL if a "previous" survey has demonstrated a low probability of adverse effects on the ecosystem. How recent must the "previous" survey have been?

CL-16/60 55. Page 4-22, Section 4.3.6.2, Line 43 and Page 4-23, Section 4.3.6.2, Lines 1-5 The Supplement should better define or provide examples of circumstances under which a site-specific analysis of potential terrestrial ecology impacts in previously undisturbed areas is required. What constitutes a "potential of adverse impact to important terrestrial resources"? What is an "important" terrestrial resource? The document should provide criteria by which a licensee can determine whether an activity has this "potential," as opposed to merely a "low probability of adversely affecting ecological resources." The Supplement should also clarify whether a licensee can avoid doing a site-specific analysis by implementing a protection plan to protect the terrestrial environment.

Threatened and Endangered Species

CL-16/61 56. Page 4-23, Section 4 3 7, Lines 10-12. The supplement should elaborate on the basis for the statement that "the potential impacts of nuclear power facility decommissioning efforts on threatened or endangered species will normally be no greater and likely less than the effects of plant operations."

CL-16/62 57. Page 4-25, Section 4.3.7.2, Lines 3-7. The Supplement should provide guidance on determining the amount of habitat that can be disturbed beyond previously disturbed areas.

Radiological

CL-16/63 58. Page 4-27, section 4 3 8, lines 17-21. The Supplement should clarify the statement about the "relatively lower sensitivity of non-human species to radiation." Is this statement based on scientific studies or is the impact to non-humans not known? Why were decommissioning's radiological impacts on ecological receptors defined as outside the scope of the Supplement?

CL-16/64 59. Page 4-28, Section 4.3.8.3. This discussion in this section indicates that public and occupational dose comparisons were made with the facility's EIS for normal operations and with the 1988 GEIS. This statement appears to contradict earlier statements about the assessment of impacts being based on NRC regulatory limits for worker protection. Please clarify how the comparisons were made.

CL-16/65 60. Page 4-29, Section 4.3.8 3, Line 14 indicates that the data used in the evaluation are those

presented in Appendix G Appendix G uses units of collective dose equivalent; however, as also outlined in the appendix, the radiation protection standards are in units of annual individual dose. The Supplement should use consistent units and provide data on population densities for nuclear power plants.

Appendix G.2 (page G-19) provides the average public dose within a 50 miles radius of a facility The Supplement should clarify if facilities which fall outside this analysis (e g , have denser populations yielding more person-rem than indicated in the appendix) must complete a site-specific analysis.

CL-16/66 61. Page 4-31, Section 4.3.8.4. While the overall worker health impact is SMALL, Appendix G shows data from some decommissioning facilities where worker exposure is higher during decommissioning than during operations. The Supplement should clarify how these higher exposure levels compare with the radiation protection standards. Also, this section should clarify whether an analysis was done of the normal wastewater streams produced during decommissioning that are contaminated with radiation.

CL-16/67 62. Pages 4-30, 4-12 and xii. The Supplement should clarify the circumstances under which rubblization is permitted. It is EPA's understanding that, to date, rubblization has only been permitted after site decontamination. Does the term "rubblization" on page 4-30 refer to the treatment of concrete or structures that have not been decontaminated? Note that page xii indicates that the continued dismantlement of structures that have been radiologically decontaminated falls outside the scope of the Supplement.

Environmental Justice

CL-16/68 63. Page 4-57, Section 4.3.13.4, Lines 36-38. The environmental sections of some PSDARs submitted to date have not provided detailed information. The Supplement should elaborate on the "appropriate information" that licensees should provide relating to environmental justice in the environmental section of their PSDARs to enable NRC to obtain sufficient information on potential environmental justice issues at decommissioning facilities.

Cultural, Historical and Archeological Resources

CL-16/69 64. Page 4-58, Section 4.3.14. EPA appreciates that, on the whole, decommissioning is not likely to affect previously undisturbed archeological resources potentially located near the facilities, but is concerned about the potential loss of these facilities as a body of engineering work. The Supplement mentions that a few facilities may be eligible for listing on the National Register of Historic Places individually and that those facilities would then be the subject of mitigation based upon consultation with the SHPO. Eventually, however, a substantial number of facilities may be decommissioned. While the facilities themselves may not be fifty years old nor require physical in situ preservation, the processes and engineering they employed may merit inclusion in the Historic American Engineering Record (HAER) The HAER is designed to provide uniform documentation standards so future scholars can look back at our achievements and study them for a multitude of purposes. Rather than make this determination on a case-by-case basis, the NRC may want to consider working with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers to achieve a programmatic agreement or other programmatic treatment for these facilities

Transportation

CL-16/70 65. Page 4-68, Section 4 3 17.1. This section should address regulations governing the transportation of hazardous and mixed wastes as well as of low level waste.

CL-16/71 66. Page 4-69, Section 4.3.17 2, Line 5. What is meant by "not large enough to destabilize the important attributes of the system?"

CL-16/72 67. Pages 4-72 to 4-73, Section 4.3.18. The discussion of irretrievable resources more properly belongs in a section that summarizes environmental consequences. The Supplement could benefit from having such a section as was done with the recently issued draft NMSS guidance document on NRC preparation of NEPA documents.

CL-16/73 68. Page 4-72, Section 4.3.18, Line 9. It seems inappropriate to include concrete as an irretrievable resource.

CL-16/74 69. Page 4-72, Section 4 3.18 1, Line 14. The Supplement states that there "are no regulations that deal specifically with the concept of irretrievable resources." It is unclear what is meant by this statement. The following statutory and regulatory provisions pertain to irreversible and irretrievable resources in the NEPA context:
-- NEPA § 102(2)(C)(v), 42 U S C. § 4332(2)(C)(v);
-- 40 C.F.R. § 1502.16 (CEQ regulations); and,
-- 10 C F.R. Part 51, Subpart A, Appendix A (NRC regulations).

11/9/01
66FR56721

(17)

STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY

1035 OUTER PARK DRIVE • SPRINGFIELD, ILLINOIS 62704
217-785-9900 • 217-782-6133 (TDD)

George H. Ryan
Governor

Thomas W. Ortciger
Director

January 7, 2002

TO: USNRC

FROM: Gordon Appel
Deputy Director
Illinois Dept. of Nuclear Safety
217/524-4723

Response to Comments on NUREG-0586

We mailed the response on December 28, 2001. Due to the mail, we are faxing this letter to you.

PAGES... 4
(including transmittal sheet)

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Template = ADM-013

E-RIDS = ADM-03
Add = M. Mosnik (MTM2)

STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY

1035 OUTER PARK DRIVE • SPRINGFIELD, ILLINOIS 62704
217-785-9900 • 217-782-6133 (TDD)

George H. Ryan
Governor

Thomas W. Ortciger
Director

December 28, 2001

Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T 6 D 59
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chief, Rules and Directives Branch:

The NRC published a Notice of Availability of the Draft Supplement 1 to the Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities (NUREG-0586) on November 9, 2001 and invited comments from interested parties. In addition, the NRC hosted a series of public meetings to solicit comments from the public. The Department of Nuclear Safety was represented at one of these meetings and would like to offer these additional comments on the Draft Supplement.

CL-17/1

As mentioned at the December 6, 2001 public meeting in Chicago, the scope of the Draft Supplement is inadequate in its evaluation of the long-term radiological exposure to the public for the reactor entombment decommissioning method. The scope of the radiological impact studies in the supplement appear to focus solely on the actual decommissioning process, not the resultant site conditions remaining after the decommissioning is completed. Specifically, section 4.3.8 Radiological on page 4-26 states:

> "The NRC considers radiological doses to workers and members of the public when evaluating the potential consequence of decommissioning activities. Radioactive materials are present in the reactor and support facilities after operations cease and the fuel has been removed from the reactor core. Exposure to these radioactive materials during decommissioning may have consequences for workers. Members of the public may also be exposed to radioactive materials that are released to the environment during the decommissioning process. All decommissioning activities were assessed to determine their potential for radiation exposures that may result in health effects to workers and the public. This section

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considers the impacts to workers and the public during decommission activities performed up to the time of the termination of the license. Any 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."

CL-17/2 For purposes of this GEIS, the NRC is only focussing on the environmental impact of the actual decommissioning activities between the cessation of operations and license termination. This approach completely and inappropriately ignores the environmental impact associated with any radioactive material remaining following license termination.

CL-17/3 For a site decommissioning that results in a license termination for unrestricted use, the long-term radiological impacts to the public may well be within acceptable limits. However, for a decommissioning that results in a license termination with restricted site use the potential exists for long-term radiological impacts to the public to be far above acceptable limits. The draft Supplement does not consider this potential. While narrowly focussing the radiological studies to the decommissioning process, the NRC does not consider those potential long-term impacts to the public.

When the original GEIS was issued in 1988, the NRC viewed entombment as an unlikely decommissioning method. The issue of entombment was not publicly discussed in the 1997 timeframe that NUREG-1496 was published. It is unlikely that NUREG-1496 addresses the long-term radiological impacts associated with entombment. In 1999, the NRC began to consider entombment as possible decommissioning options or methods and conducted a workshop in

CL-17/4 December 1999 to gain input from the public. On October 16, 2001, the NRC published an advance notice of proposed rulemaking regarding entombment options for power reactors. Even with that notice and this draft Supplement, the NRC has yet to evaluate the long-term environmental impacts associated with

CL-17/5 entombment of power reactors. In this Supplement, the NRC fails to consider whether it has the statutory or regulatory authority to terminate a license that allows for unrestricted site use with residual contamination present on site or to

CL-17/6 terminate the license with restricted site use in an Agreement State. Residual contamination left at a site whose license was terminated for unrestricted use could

CL-17/7 be perceived as disposal of low-level radioactive waste. By definition

CL-17/8 entombment is disposal of low-level radioactive waste in the containment structure. The Atomic Energy Act allows states to assume regulatory authority over the disposal of low-level radioactive waste in their state. In an Agreement State it is the Agreement State not the NRC that has the jurisdiction over disposal of low-level radioactive waste at reactor sites.

The federal government has established policies regarding the disposal of low-level radioactive waste. The federal Low-Level Radioactive Waste Policy Act of 1980 and the Amendments Act of 1985 require the states to provide for the disposal of low-level radioactive waste generated within their borders. States were encouraged to form regional compacts to limit the number of disposal facilities developed. As an incentive to form compacts, compacts were given certain rights to control the import and export of low-level radioactive waste into or out of their region as well as to establish policies regarding the management of waste within their region. To date, 10 such compacts have been formed and ratified by Congress. Most compacts envision having one regional disposal facility that

CL-17/9 would accept and safely dispose of their region's waste. Allowing NRC to determine whether waste can or will remain after a reactor license is terminated is contrary to the policy of the respective compacts and in direct disregard of the federal low-level radioactive waste framework established by Congress.

CL-17/10 As the NRC evaluates the comments received on the GEIS, it should look beyond the actual decommissioning process and focus on what condition the site

CL-17/11 would be in following license termination. If the possibility exists that radioactive material will remain on site under an unrestricted or restricted use condition, the GEIS should consider the associated long-term environmental impacts. In

CL-17/12 addition, the NRC should reevaluated their legal standing in deciding what radioactive material would remain at a reactor site located in an Agreement State and whether their proposed action would be contrary to the waste management policies of the applicable compact.

Any question you may have regarding this letter may be directed to me at 217/785-9868.

Sincerely,

Thomas W. Orteiger
Director

TWO:bac

11/09/01
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(18)

From: "Hickey, Eva E" <eva.hickey@pnl gov>
To: "mtm2@nrc.gov" <mtm2@nrc.gov>, "sxf@nrc gov" <sxf@nrc.gov>
Date: 1/15/02 6 25PM
Subject: FW: Comments on NUREG-0586 Draft Supplement 1

-----Original Message-----
From: Jerry Delezenski [mailto:JDeleze@smud org]
Sent: Tuesday, November 20, 2001 11:12 AM
To: 'dgeis@nrc.gov'
Subject: Comments on NUREG-0586 Draft Supplement 1

Cynthia Carpenter, Chief
Rules and Directives Branch
Division of Administrative Services
U.S. Nuclear Regulatory Commission

Re: Comments on NUREG-0586 Draft Supplement 1

Ms. Carpenter:

CL-18/1 We would like to comment on the draft NUREG to correct an error in Table 4-3, line 21 regarding the Cost Impacts of Decommissioning for Rancho Seco. Line 21 should read:

Rancho Seco 913MWe PWR DECON $394

Please refer to our letter submitted to the NRC Document Control Desk dated 3/26/01 entitled Rancho Seco Report on Decommissioning Funding Status. On page 2 of the letter we stated:

"...Their [TLG] estimate was $495.4 million in 2000 dollars. The portion of this total that is non NRC-defined decommissioning activities related to non-radiological dismantlement and management and storage of spent fuel is $101 million, most of which is related to fuel storage costs..."

...TABLE 2...
2000 $495 Million.....

SMUD, when it first established its decommissioning fund, included radiological dismantlement costs and costs related to storing spent fuel. Therefore, $495m -$101m leaves $394 million for equivalent cost discussed in Table 4-3 of the NUREG.

CL-18/2 Since 1999, Rancho Seco has embarked on an extended DECON process scheduled for completion in 2008 (including license termination). After license termination, SMUD will, depending on its business needs, embark on sit restoration currently estimated at ~$45-80 million. This approximate estimate dollar figure was never a part of the decommissioning trust fund. (We assume your number in Table 4-3 includes all the costs of dismantlement, fuel storage and non-radiological site restoration.)

CL-18/3 Also, based on information presented in various industry forums, several

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Add = M. Hasnik (MTM2)

numbers quoted for some of the other plants may be inaccurate. Each plant should verify the numbers for accuracy.

Thank You,

Respectfully,

Jerry Delezenski,
Supt. QA/Licensing/Admin
Rancho Seco

Stephen A Byrne
Senior Vice President, Nuclear Operations
803 345 4622

SCE&G
A SCANA COMPANY

December 20, 2001
RC-01-0204

11/7/01
66FR56721
(19)

Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T 6 D 59
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Gentlemen:

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12
COMMENTS ON THE DRAFT SUPPLEMENT TO THE FINAL GENERIC ENVIRONMENTAL IMPACT STATEMENT ON DECOMMISSIONING OF NUCLEAR FACILITIES

Reference: Draft Supplement 1 to NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities" November 9, 2001, Federal Register, 66-FR-56721

South Carolina Electric & Gas (SCE&G) company offers the following comments on the above-mentioned document.

CL-19/1 Page 3-24 mentions the containment ceiling being lowered to the top of the pressurizer for a PWR under the ENTOMB2 option. Appendix E, page 9 lists this action as optional. This action needs to clearly be listed as optional on pages 3-24, 3-25, and 3-31. SCE&G believes this action should be optional as listed in Appendix E due to the extreme effort to lower the ceiling of a massive building such as the reactor building and yet maintain it intact for entombment purposes.

CL-19/2 Also, on page 3-24 "low density concrete grout" is mentioned. Grout is not lightweight, but concrete can make use of lightweight large aggregate to lower the weight per volume. Therefore, SCE&G recommends concrete be used in place of grout on pages 3-24, 3-25, 3-31, and 3-33.

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E-RIDS = ADM-03
Add = M. Masnik (MTM2)

Nuclear Regulatory Commission
0-L-99-0290
RC-01-0204
Page 2 of 2

If you have any questions, please call Chris Crowley of my staff at (803) 345-4409.

Very truly yours,

Stephen A. Byrne

CAC/SAB/mb

c: N. O. Lorick
N. S. Carns
T. G. Eppink
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RTS (0-L-99-0290 #4)
File (811.10)
DMS (RC-01-0204)

21 PAGES TOTAL · COPY

PAMELA BLOCKEY-O'BRIEN, D23 Golden Valley
7631 Dallas Hwy, Douglasville, GA 30134

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Chief, Rules and Directives Branch,
Division of Administrative Services,
Mailstop T 6 D 59,
US Nuclear Regulatory Commission,
Washington, D.C. 20555-0001

Dec. 26th, 2001

RE: Comments for the record on "Draft Supplement 1 to Nureg-0586, Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities (GEIS), Draft Supplement Dealing with Nuclear Power Reactors".

What a way to spend the day after Christmas--what a way to spend many hours of December and November--having to plow through this document -- a monument to mans' arrogance, stupidity, lack of foresight and greed, if there ever was one. However, CL-20/3

CL-20/1 the document can be condensed into three words, namely : "DUMP AND COVER", if one wants a basic overview of what NRC put in it, as that seems to be part of the main CL-20/4 desire of the nuclear industry/NRC (and D.O.E !), concerning what to do with the horrendous nuclear legacy of the atomic age . At the height of the Cold War, in the U.S., defense against the atomic bomb and the hydrogen bomb (which in essence, uses a fission - atomic- device/bomb/reaction to trigger the fusion reaction/bomb/ CL-20/5 device which triggers. etc. etc. etc.) was an incredible defense which was called "DUCK AND COVER". They actually had the population believing that if you ducked under a door jamb, or under a desk at school, or under a table in the kitchen, you would survive nuclear war.. While this side of the Atlantic dutifully behaved like a bunch of sheep going over a precipice following the leader, the other side of the Atlantic, thousands upon thousands demonstrated against the insanity of the arms race and nuclear weapons in general. Why was there a difference in behavior ? Because, just like today with this issue of nuclear waste and "decommissioning", (a word everyone swallows it seems - must be a new made up word as it is not in my huge old dictionary) - there was/is almost no discussion of the issues in the press, and no education on the issues, and this is purposeful. There is, and has been, press interference on the issues - by both industry and governments.

CL-20/2 The nuclear issue is the most important issue facing humanity and has been since the atom was first split. The nuclear issue is the Sword of Damocles over the planet and all future generations should we survive the next decade, (as I write India and Pakistan are once again on the verge of war, only they now have nuclear

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E-RIDS = ADM-03
Add = M. Hossain (MTM 2)

weapons, thanks to the fact that they got both nuclear power plants and research reactors, -get those, and with enough money and infrastructure and a government willing to squander billions, just like the Soviets, the British, the US, the French, the Chinese, the Israelis, the South Africans under apartheid, did, -and sooner or later you've got yourself a bomb- THE BOMB - (that old nuclear power/atomic bomb connection no one wants to mention.) You mean NRC thought no one realized the nuclear power route was just a diversion so the public wouldn't realize they were running plants to produce extra plutonium for weapons if needed ? Oppenheimer SAID so. Besides, any-one with common sense could figure that out. Just as anyone with common sense can tell this Draft Supplement 1 to Nureg-0586 will have dire consequences if implemented in its current form. It always amazes me how the Nuclear Regulatory Commission INVENTS its own laws and standards - its own regulations, its own definitions (such as "de-commissioning" see p. xii) and most of the public doesn't realize (if they did, it is safe to assume they would probably horsewhip the Commission out of town) what a sham it all is and how industry writes its own ticket. For example, p. xii, the Commission has concluded (says the Commission) that impacts that do not exceed per-missible levels in the Commission's regulations are considered small. In other words, using made up regulations based a great deal on that appalling, criminally negligent outfit the ICRP, (one of the dumping grounds for Manhatten Project scientists post WWII - for anyone reading this from the younger generations, the Manhatten Project was the name of the project that built the atomic bombs dumped on Hiroshima and Nagasaki) and its, the ICRP's, early determinations that they would set allowable levels of exposure that were at levels that would allow the emerging atomic energy industry, and everything that went with it, to operate with all the releases which they knew and admitted would cause genetic damage, but they decided it would be acceptable to damage sperm and ovum . To damage countless generations (until they die out) to cause countless birth defects, countless miscarriages, countless cases of spina bifida - look at South Carolina, nuclear power plants and the Death of the Earth squad's Savannah River Nuclear Site and the highest spina bifida rate in the US. CL-20/6 NRC has absolutely no basis to say whether impacts will be small etc. based on that

CL-20/7 sort of garbage. The great R.M. Sievert (after whom the unit the Sievert is named) pointed out that there was no level below which radiation did not cause damage, no threshold that must be exceeded for damage to occurr, yet NRC says a threshold must be exceeded for effect to occur, I believe Sievert. The ICRP standard of 5Rem per year is based on a principle called risk/benefit that allows a one in five thousand chance of contracting cancer. In other words, the death or cancer risk is the workers and the publics' , the benefits are the dollars flowing to the industry and the NRC (from the industry in return for NRC services and licenses etc) The NCRP also pushes the 5 Rem standard - this is the same bunch of bozos who in trying to refute the world renowned findings of Dr. Alice Stewart and the famous Oxford Study accepted worldwide, that showed x-raying a developing fetus caused a major increase in childhood cancer - claimed obstetricians had x-rayed those fetuses which they somehow KNEW would get cancer, which explained why the x-rayed fetuses went on to get childhood cancer!! (See "The Woman Who Knew Too Much - Dr. Alice Stewart and the Secrets of Radiation" by Gayle Greene. Read it and learn all about the Commission and its buddies. Read it and weep for humanity, then , if you have something called a conscience at the NRC, go do something about this Draft so it is no longer an industy wish list.) The ALARA principle that NRC uses which basically says that doses must only be kept As Low As Reasonably Achievable (ALARA) based on the state of the technology and the amount of money spent by the industry - what Dr. Gofman calls "planned deaths" as NRC knows -

CL-20/8 is referenced by NRC many times, and the Draft even says during licensing the applicants commit to implement ALARA programs. The combination of ICRP, NRC, NCRP and ALARA standards is, and has been a recipe for premeditated murder and/or illness,

CL-20/9 genetic damage and great suffering as it is, NRC saying that it has not established standards to biota other than humans on the basis that limits established (by the aforementioned) for the public would provide adequate protection for other species is outrageous and contrary to what has been established for decades. Plus, to

then cite the bozos at NCRP again, saying that the "fate of individual non-human organisms is of less concern than the maintainance of endemic population," shows A COMPLETE LACK OF UNDERSTANDING OR COMPREHENSION OF THE WEB OF LIFE AND THE NATURAL WORLD. The effects of ionizing radiation exposure on ALL life forms includes sterility and genetic damage which can lead to extinction. (Think fruit flies and Herman Muellers experiments which gave him a Nobel Prize. Think the

CL-20/10 effects to fish, proved years ago.) When thinking about exposure to plants and animals and fish, one needs to take the effects to an infant and to a child in the womb to better approximate the effects to wildlife, the smaller the non-human entity (e.g. a bird, a frog) the child in utero down to embryonic level would be appropriate. We all know what happens when an embryo is exposed - namely death or or severe damage. The same happens to birds eggs. The International Atomic Energy Agency is about as trustworthy on the radiation dose issue as Attila the Hun would have been on the gentleness issue - the IAEA has as charter that states its sole purpose in life is to push all things nuclear, just what does NRC expect them to say ?

Almost 50 years ago, the Georgia ecologist Eugene Odum, who did a lot of work for the Atomic Energy Commission/DOE (a fact that is not now widely known) under contract, wrote of the need to "accelerate the study of the function of intact biotic communities in order that the total radiation effects can be evaluated" of the need for "an understanding on the long term influences of low level radiations on aquatic and terrestrial environments into which the by-products may be released," and that it was concievable "that every large atomic power plant of the future will need a radiation ecologist to work with environmental problems outside of the plant" and that there was a need to train "young men simultaneously in the fundamentals of modern ecology and radiation biology in order that this inevitable need can be met." How terribly sad - the NRC has one doctor for the entire NRC. Radiation biologists ? Stop me before I scream. It is obvious that an inventory of all life forms on a site should be made and that they be screened for chromosome aberrations and radioactive contamination, then

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a similar comparison be done at a site as similar as possible to the plant site about twenty miles away upstream and out of the predominant windpath on a thirty year wind rose. It would not be half as good as one would want, but it would be better than nothing and establish some differences and give a better idea of the contamination problems, even though a site twenty miles away will have recieved some airborne deposition from the plant. In terms of aquatic species, the record from State sources and the licensee on tests run on fish/mussels etc. can be used and compared to the fact, repeat FACT, that contaminants such as Cobalt-60, Sr-90 Cs-137, H-3 above the minute natural burden, plutonium etc. are not natural and should never be found in fish, mollusks etc. and one can look for chromosome aberrations. Diatoms can be examined for bioaccumulation of the uraniums from the plant. Centuries hence – in some cases decades – a measure of aquatic health would be the decrease in levels of contaminants found in species and decrease in aberrations etc. It is vital, that contaminated sediment found downstream (and also some upstream due to airborne deposition on water sinking down) be removed for many miles downstream. This should be done by perhaps sucking it up via vacuum type hoses as opposed to dredging which could dislodge and spread the contamination further.

With regard to plant life, microorganisms etc. one could compare plant seed production of say twenty species on site, with production twenty miles away, and number and type etc. of microorganisms likewise, as well as radioactive contaminat –

CL-20/11 ion. I don't really know why I am bothering to write all this, as the NRC will ignore it anyway, but hope springs eternal as they say. If we don't have comparisons, we can't have at least some idea of what constitutes the start of a return to a more unpollutted site, and we can't establish what needs bulldozing and taken to a radioactive waste national sacrifice area.

CL-20/12 THERE SHOULD BE ABSOLUTELY NO UNRESTRICTED USE OF THE PROPERTY EVER. THE ADDITIONAL EXPOSURE IS TOTALLY INSANE. WHEN DR. KARL MORGAN WAS ALIVE * THE FATHER OF RADIO-

CL-20/13 LOGICAL HEALTH PHYSICS, FORMERLY WITH OAK RIDGE FOR DECADES, HE SAID LESS THAN ONE MILLIREM PER YEAR ONLY WOULD BE PERHAPS ACCEPTABLE FROM ALL PATHWAYS. THERE NEVER

6

SHOULD BE A LACK OF INSTITUTIONAL CONTROL EITHER.

CL-20/14 The Technical Specifications and what the facility was allowed to dump under the license are coutdated and bear no resemblance to current knowledge and should

CL-20/15 be junked and the whole thing done over. Furthermore, the way the environmentall and water issues were looked at during the time of plant licensing were often equally awful. It all needs reconsidering.

What is ridiculous, is the worry about messing up the environment while decommissioning the dump. For crying out loud, every second the plants are running they are contributing to ecological ruin, at the microscopic level, and impacting human health to a distance of approximately 100 miles.

CL-20/17 This Draft 1 references MARSSIM (Multi-Agency Radiation Survey and Site Investigation Manual.) I commented on the Draft, never saw the final, never heard from anyone again on it. It was mindnumbingly awful. Put together by some people from NRC, DOE, Dept. of Defense, and EPA. Industry was represented big time. In it the DOD said how committed it was to protecting the environment – this from an entity that had left thousands of contaminated sites on and off bases, themselves requiring an estimated (govt. estimate) $100 BILLION to $200 Billion to cleanup worldwide. In its introduction, Draft "Marssim" did not address all sorts of things from contamination on vicinity properties through contaminated subsurface soil, water, construction materials and on and on. All of which must be cleaned up/have the contamination removed. They showed a lack of understanding of the groundwater cycle, and groundwater issues JUST LIKE THIS DRAFT DOES (in fact I am still looking

CL-20/18 for it to be addressed), Groundwater is used by countless communities, groundwater is eventually released to surface and other water bodies and, as groundwater onsite is usually radioactively contaminated, (At Plant Hatch they contaminated it by 1979 and that was just for starters). It is is a SERIOUS issue that MUST be dealt with, groundwater that is contaminated must be pumped out etc. (Refers to what I

CL-20/19 said in earlier comments) THIS GROUNDWATER CONTAMINATION ISSUE IS ANOTHER REASON WHY "RUBBLIZATION" MUST BE FORBIDDEN. THE CONTAMINATION IN WHAT THEY WANT TO RUBBLIZE AND BURY WILL LEACH TO THE GROUNDWATER AND DIRECTLY IRRADIATE SOIL AND MICROORGANISMS. The industry just wants to save money and "dump and cover".

CL-20/20 The fact that the Staff and the Commission have even considered rubblization.
shows an utter disregard for the health and welfare and safety of the public
CL-20/21 and the ecosystem upon which life depends. Anything dumped or buried from the past
practices on site must also be dug up and removed.
CL-20/22 To find out the extent of past problems, and contamination levels, IT IS VITAL
THAT THE NRC, THE LICENSEE (as some are new owners/licensees), AND THE CONTRAC-
TORS AND SUB-CONTRACTORS, GET ALL Reports of ACCIDENTS, LICENSEE EVENT REPORTS, VIOLATIONS,
INSPECTION REPORTS, SPILLS AND CONTAMINATION EVENTS FROM THE DOCKET FOR THE
REACTOR AND SITE IN QUESTION, AND BLOODY WELL GET OFF THEIR REAR ENDS AND EARN
THEIR MONEY AND READ THEM. THEY NEED THE WHOLE LOT, SINCE START-UP, EVEN IF IT
TAKES TWO MONTHS TO READ THEM. I AM SICK AND TIRED OF EVERYONE, NRC INCLUDED,
REFUSING TO READ THOSE REPORTS FROM THE DOCKET AND IN THE PUBLIC DOCUMENT ROOM. CL-20/28
THEN, AS THE LICENSEES USUALLY PUT A GOOD SPIN ON IT, PEOPLE SHOULD REALIZE THE
PROBLEMS LISTED WERE PROBABLY WORSE. Another issue, which I touched on in my
comments on MARSSIM, was the fact that in the real world, many people can not
read or write very well, and if things are contracted out, this could have
CL-20/23 serious consequences. NRC must stipulate, that ALL CONTRACTORS AND SUB-CONTRAC-
TORS RIGHT DOWN TO THE BACK-HOE OPERATORS MUST BE HIGH SCHOOL GRADUATES. Cleanup
cannot just be dished out to any contractor, all involved should not only have a
stirling track record, but experience in nuclear fields. There should be a radiation
biologist on site, plus a health physicist, plus a wildlife biologist with a CL-20/29
knowledge of radiation effects, plus there must be federal and state oversight CL-20/30
CL-20/24 ON THE SITE at all times. I noticed that the Draft blabbers on about OSHA standards-
YET FAILS TO MENTION THAT OSHA DOES NOT COME ON SITE AND IS NOT ALLOWED TO ACCORDING CL-20/31
TO OSHA, EVERYTHING IS UNDER NRC. So let's print the truth shall we ?
CL-20/25 The Draft says, p.1-6, that the NRC and the Commission are not considering the issue CL-20/32
of spent fuel storage (in a pool or in one of those ridiculous casks outside in CL-20/33
plain view for every terrorist to see) as part of decommissioning. The excuse is
CL-20/26 that it's dealt with under other license aspects. It also says that the Commission
has made a finding that the DEADLY, RADIOACTIVE SPENT FUEL CAN BE STORED SAFELY

AND WITHOUT SIGNIFICANT ENVIRONMENTAL IMPACTS FOR AT LEAST THRITY YEARS BEYOND
THE LIFE FOR OPERATION ETC. ETC. IS THE COMMISSION OUT OF ITS COTTON-PICKING MIND?
CL-20/27 Those issues are of grave concern. What happens , if during decommissioning (i.e.
during "dump and cover", amidst much licensee laughter about how they stuck it to
the rate payers and taxpayers and local community yet again) terrorists take out
three spent fuel casks blasting them to kingdom come (the Milan anti-tank weapon
would do that, as I wrote NRC before) OR two casks had a major problem and needed to
be opened under shielding inside the spent fuel pool and there was either no room
in the spent fuel pool or the cask came apart while trying to move it due to em-
brittlement of the cask from the radioactive decay heat coming off the spent fuel ?
Whatt will NRC do, what will the licensee do , send for Ghostbusters ?
Under Water Quality p.4-10,4-11 The NRC must stop giving the impression that
it is a sheer chance that nuclear reactors are located on water, when in fact they
require millions of gallons of water a day to operate and that water source is con-
sidered the ultimate heat sink in the case of a meltdown - it will ooze on down the
river, hissing and sputtering like a volcano hitting water. NRC assumes compliance
with NPDES discharge permits for non-radioactive contaminants (NPDES and the Clean
Water Act do not cover most radioactive contaminants, this was purposeful, so industry
and the armaments crowd could do what they liked,) however, NPDES permits are
often violated or bypassed - just look at the NPDES situation in Georgia as one
example. Discharges should never have been allowed without prior cleanup and should
not be now. Surface and groundwater quality, p. 4-12, should NOT be considered a ge-
neric decommissioning issue - climate zone can also create unique problems, terrain
likewise, it should be site specific. Air quality issues, p. 4-12 etc., do not address
the fact that HEPA filters are about as good as useless for radioactive particulate
holdup and sand filters should be added as well. All workers must have self-contained
breathing systems (moon-suits) . The area being worked in should be covered to con-
tain dust if it means covering the whole site with a tent with an adhesive inner
surface to capter (capture) particulates - after all if flypaper is good enough for the DOE
when it, like the NRC was called the AEC, to capture particulates on, a tent with

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some sort of a sticky undersurface is a step up! The point I'm getting
CL-20/34 at, is,one does not want radioactive and chemical particulate matter getting
CL-20/35 offsite if possible. If such a tent system were used, afterwards it would be disposed of as rad waste. Also, workers and the public MUST understand the fact that one can not clean up radioactive contamination, only contain it to some extent and remove contaminated materials to better sites where they can be better contained - in other words to national sacrifice areas remote from all human habitation and far from water sources, where wild life is fenced out.
CL-20/36 Regarding aquatic ecology p.4-16, as touched on earlier, the environmental impact statements originally written for the plants were often very poor, and did not mention that the discharge water would be radioactively contaminated nor that sediment would be contaminated for miles etc. In the long term, if the contaminated sediment is removed and no further radioactive and chemical releases
CL-20/37 are made to water and air, the aquatic ecology can only improve. Water quality should continue to be tested for radioactive contaminants for at least 600 years which is the full radioactive hazardous life approximately for cesium-137 which is a contaminant of concern in fish and shellfish as it migrates to muscle in
CL-20/38 particular. The aquatic ecology issue should also be site specific, for example, Plant Hatch in Southern Georgia had a massive spent fuel pool spill which contaminated not only the river and sediment but also a huge wetland area which has many creatures feeding in it and becoming contaminated, including threatened and endangered birds. And on the endangered bird subject, let me address the
CL-20/40 Migratory Bird Treaty Act of 1918 – (p. 4-20) It is a proven fact - proven by the old Atomic Energy Commission and its contractors,- that migratory birds become contaminated eating seeds,drinking water and so on at radioactively contaminated sites, wetlands areas etc. and the birds carry this contamination in their bodies worldwide. NRC ,DOE and licensees violate the MBT by not protecting birds from such contamination, and by spewing radioactive noble gases out that impact passing birds. No wonder birds are declining. This is one of the reasons I suggest that netting or similar should be placed over the sites in

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question, fine wire mesh set at an angle that can have leaves and other debris hosed off it, it must be small enough to keep birds out down to the size of hummingbirds. Enclosed, such an obscenem site poses slightly less of a threat to birds and other wildlife, the utilities can pay for it all, it can come outt ofthe salaries of the top management and company owners. NRC better set it up now, before they all pull an "Enron" – i. e., an "end run" round everyone.

CL-20/41 I notice that the General Accounting Office has slammed the NRC for its lack of oversight of transfers and mergers in the nuclear industry and had not verified that new owners would have guaranteed acess to the decommissioning charges that their affiliated utilities would collect, in some cases, plus, a host of other safety and other issues were raised, all of which are troubling. The NRC must immediately address problems, and should demand that companies provide enough money for oversight - to include security staff,maintainance staff, nuclear engi-
CL-20/42 neers, radiation safety officers etc. - essentially forever. Even after all fuel is removed from the site and the entire structure is removed, the site will still be radioactive forever and still need a security person, basic maintainance person (for upkeep of fences, gates, runoff detention ponds etc.) and regular visits from
CL-20/43 a radiation safety officer. It is absurd that NRC states that "decommissioning activities do not include the maintainance, storage or disposall of spent nuclear fuel, or the removal and disposal of nonradioactive structures and materials beyond that necessary to terminate the NRC license.....they are not considered as a cost impact because the licensees are not required to accumulate funds for these activities." (See p. 4-42) Why not ? This is an outrage! The NRC must pass a Rule at once requiring such money be set aside, some of it perhaps in form of gold and silver bullion at bank deposit in case of financial collapse. The fact of the matter is this: the licensees must be held responsible and accountable for everything about and on the site and generated by the site past, present and future. As NRC states (p.43) local jurisdictions may impose stricter"cleanup" or waste
CL-20/44 or contamination containement and this will cost more. The NRC should add a 10% surcharge to any calculated fees for decommissioning to help cover those costs

CL-20/45-46 that are unforseen which may arise. And of course they must pay for the "spent" deadly radioactive fuel storage at the sites, whether in pools or casks at ISFSI's and the maintainance and upkeep and security and waste handling and fire preventiom and similar. This MUST be addressed as part of this decommissioning, it must be

CL-20/47 incorporated. THE COSTS MUST NOT BE PASSED ON TO THE RATEPAYERS as NRC says they

CL-20/48 are currently. Furthermore, the most expensive estimate should always be assumed for everything as a wise precaution. NRC lists the decommissioning costs in MILLIONS as estimated by the utilities - however, NRC WELL KNOWS THE COSTS ARE IN THE BILLIONS WHEN EVERYTHING FROM SPENT FUEL ON DOWN IS FACTORED IN, AND THAT MUST BE REFLECTED, PLUS THE NRC INSPECTOR GENERALS OFFICE SHOULD GO OVER ALL ESTIMATES

CL-20/49 MADE BY UTILITIES TO SEE HOW TRUSTWORTHY AND ACCURATE THEY ARE. Inflation must also be added to costs.

CL-20/50 Regarding the loss of local tax revenues due to "decommissioning". The utility must be required to notify the local government as far in advance as possible that they will lose taxes. The fact that the local government should never have allowed such nuclear dumps, posing as power plants, into their communities is another issue. They need to understand that they better diversify their tax base in a hurry.

CL-20/51 HOWEVER, the nuclear industry - the entire industry - (from nuclear plant owners to uranium enrichment plants to users of radiation for medical experiments posing as "therapy" etc) should have a tax levied on it by NRC to be paid into a special account to go towards compensating the communities. An additional tax can be levied on them yearly in the form of a small, flat fee which would help pay for the NRC and the EPA to do quarterly inspections at facilities, in perpetuity.

CL-20/52 Before I forget : NRC MUST MAKE LICENSEES, CONTRACTORS, SUBCONTRACTORS AND ANYONE WHO WORKS ON DECOMMISSIONING TAKE THE EFFECTS OF RADIOACTIVE "DAUGHTER" PRODUCTS INTO CONSIDERATION AS THEY MAY HAVE VERY DIFFERENT PHYSICAL, CHEMICAL AND RADIO-ACTIVE PROPERTIES THAN THE RADIOACTIVE "PARENT". THIS MUST BE PART OF DECOMMISSION-ING STANDARDS. MARSSIM basically ignored that, another reason their Draft was so

CL-20/53 awful. NRC seems to have ignored it in this Draft also. This is an important health and also environmental issue that cannot be ignored.

CL-20/54 Regarding Occupational Dose and nuclear power plant exposure data: (p.G 12, etc) The regulatory limits for exposure were not set based on medical reasons but were set in order to enable the industry to operate - that is historic FACT - because what people are being exposed to is either not found in nature (i.e.

CL-20/55 it is man-made) or found in nature at far, far lower levels. The exposure allowed by regulation is, in fact, slow death, and furthermore, worker doses can't always be trusted because of faulty measuring equipment, horror stories of workers being told not to wear their dosimeters periodically, and so on. The dose recieved also has a different effect on each person depending on age, sex, current and past health status and many other factors, plus each organ is affected differently. The fact that the ICRP, DOE, NRC etc. didn't know what on earth they were doing -other than guesswork - regarding exposure levels set, is shown by the fact that they had to keep adjusting the "allowable" regulatory limits down-ward. A sort of continuous "Oops, we screwed up ! But don't worry, this time we've got it right." All the blather on "Risks" from radiation exposure can't hide the fact that it kills - not just cells here and there such as cells about to form the septum of a babys heart so the child is born with a hole in it's heart, because a bunch of murderers at the ICRP decided the risk was acceptable - but it kills people. To KNOWINGLY ALLOW PEOPLE TO BE EXPOSED TO SOMETHING THAT WILL KILL A CERTAIN PERCENTAGE OF THEM, HAS A NAME, PREMEDITATED MURDER * JUST BECAUSE A REGULATION WAS WRITTEN SAYING ITS OK, DOES NOT CHANGE IT. Further, the ICRP does not consider effects manifested after the second gen-eration in assessing the genetic risks to workers offspring (p.G 5) again showing they don't give a damn about the workers and their families and whether or not workers great grandchildren are born deaf, or with learning disabilities, or

CL-20/56 unable to reproduce. For the Draft to take the attitude of "well, the doses at plants being decommissioned are generally only a small fraction of doses at operating plants " p. G.13 is no comfort, and all the charts show, concerning Occupational doses (page G 14 and on), is thousands upon thousands of contaminated workers . It is obvious that this contamination of workers (and the environment)

must be massively reduced.

CL-20/57 I noticed that it said cutting methods included abrasive water G-17, but in any case where there is plutonium contamination or depleted uranium metal, that all is meant to be cut under heavy oils and mushh else besides, Since many of the components will have been contaminated with plutonium, or were made of depleted uranium (when is the NRC going to tell the public that DU is NOT radioactive

CL-20/58 waste.?) it is obvious that the reactor vessel should NEVER be cut up, but do what was done with the Trojan velsel (p. G-18, Remove the whole thing offsite)

CL-20/59 However, the vessel should have additional shielding placed around it prior to placement on the heavy haul trailer, and upon arrival at the disposal site it

CL-20/60 should be further encased in what would amount to a giant burial cask. Removing the vessel offsite massively reduces worker doses, water contamination and the contamination to the local community and the environment. Obviously, the spent fuel is /has been removed from the reactor vessel and all liquid radwaste etc.

CL-20/61 too ! UNDER NO CIRCUMSTANCES SHOULD A FACILITY BE ALLOWED THE OPTION OF CHOOSING

CL-20/62 THE METHOD OF DECOMMISSIONING IT WANTS, AS IS THE CURRENT CASE. Combinations of DECON and SAFSTOR would be the best, however, under no circumstances should SAFSTOR continue past five years (the regulation should be changed, as to expect that oversight will continue for 60 years at such sites is ridiculous) that would enable workers familiar with the plant to be still available, but at the same time allow for the decay of some of the radioactive contaminants which have shorter full hazardous radioactive lives prior to removal, thus lowering

CL-20/63 worker exposure etc. NO WAY THIS SIDE OF HELL SHOULD ENTOMB I OR ENTOMB II BE ALLOWED. BOTH STAFF AND THE INDIVIDUAL COMMISSIONERS SHOULD BE CHARGED WITH CRIMINAL NEGLIGENCE – ALONG WITH THE LICENSEE – IF THEY PUSH THAT THROUGH, AND I AM CONFIDANT THAT MANY WOULD ENSURE SUCH CHARGES ARE FILED. THERE IS INDIVIDUAL RESPONSIBILITY CONCERNING THESE MATTERS, AND IF NRC CANNOT UNDERSTAND WHY THE ENTOMB OPTIONS ARE AN ABSOLUTE NO-NO, THOSE WHO CAN'T GRASP THE "WHY" PART SHOULD RESIGN AND STICK TO SOME EMPLOYMENT WHERE THE USE OF THE BRAIN IS NOT HIGH ON THE

LIST OF JOB REQUIREMENTS.

CL-20/64 It appears that the nuclear industry has written its own ticket , as usual, on the issues in the Draft. P. E-5 notes the help from the Nuclear Energy

CL-20/65 Institute in gathering information. HOW ABOUT THE NRC ACTUALLY READING THE INSPECTION REPORTS AND VIOLATIONS ETC. ON THE DOCKETS OF EACH FACILITY AS I

CL-20/66 SAID EARLIER . HOW ABOUT TESTS BEING RUN BY THE NRC ON THE SITE .HOW ABOUT INTERVIEWS WITH LONG TIME STAFF CONCERNING PAST PROBLEMS THAT COULD BE EN-

CL-20/67 COUNTERED? NRC should take its own independant samples of offsite water and sediment and soils, as well as onsite.

The NRC must not go by the original Offsite Dose Calculation Manuals as what was allowed in then, went out with the ARK – i.e. the levels were terrible, a recipe

CL-20/68 for radioactive pollution. I cannot stress enough that the groundwater issues

CL-20/69 are not adequately addressed. The use of high pressure water sprays is obscene.

CL-20/70 WHAT IS WRONG WITH THE NRC ? DOESN'T NRC UNDERSTAND THAT ONE CANNOT DECONTAMINATE SOMETHING RADIOACTIVELY CONTAMINATED IN THE TRADITIONAL SENSE, UNLIKE WITH A CHEMICAL OR OTHER CONTAMINANT, WHATEVER IS DONE TO SOMETHING RADIOACTIVE DOES NOT CHANGE THE CHARACTER OF THE RADIATION, IT CONTINUES TO EMIT ITS DEADLY ALPHA, BETA, GAMMA , NEUTRON ETC. RADIATION THROUGH THE FULL RADIOACTIVE HAZARDOUS

CL-20/71 LIFE. YOU CAN'T BURN IT/ INCINERATE IT, IT GOES OUT THE STACK AND POLLUTES THE STACK, YOU CAN'T WASH IT, IT WINDS UP ALL OVER THE PLACE AND IN THE WATER, IT IS ALWAYS THERE, THE DEADLY, INVISIBLE KILLER . AT MOST YOU CAN TRY AND CONTAIN IT. The Tritium can't even be contained.

CL-20/72 The original site maps and drawings and photos made during construction should be consulted (some building techniques may have changed) all modifications and revisions should be tracked down. All vent systems should go through both HEPA (for the chemicals) and sand filters. Additional containment should be added around spent fuel pools including over the top and beneath it, extra supports, new liners. They will suffer serious embrittlement and activation,

CL-20/73 same goes for the casks. Such issues must be addressed. Again THERE MUST NEVER BE A PARTIAL OR FULL SITE RELEASE. ALL PROPERTY DEEDS MUST STATE THE SITES ARE

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NOT ONLY RADIOACTIVE, BUT SUPERFUND SITES, AS THAT IS WHAT THEY ARE. THE RIVER, LAKE, OCEAN BEACH STRETCH OR WHATEVER IS NEXT TO THE SITE SHOULD BE POSTED AS RADIOACTIVE ALSO, EVEN IF THE SEDIMENT IS REMOVED, AS IT IS IMPOSSIBLE TO GET EVERYTHING.

CL-20/74 Security must be upgraded, not downgraded.

CL-20/75 No structural remains should be sent to local landfills - the landfill will be

CL-20/76 radioactively contaminated more than at present. As all landfills leak, it will

CL-20/77 go to the groundwater and migrate offsite. None of the mixed waste should be dealt with as mixed waste (i.e. a combination of chemical/hazardous and radioactive) because MIXED WASTE FALLS THROUGH ALL REGULATORY CRACKS, BUT IT SHOULD BE TREATED

CL-20/78 AS RADIOACTIVE WASTE. WASTE OILS SHOULD NOT BE SENT TO VENDORS FOR INCINERATION OR RECYCLING OR RE"USE AS THEY ARE CONTAMINATED.

CL-20/79 EVERY SITE, OPERATING OR NOT OPERATING, IS A PRIME TERRORIST TARGET AS I HAVE

CL-20/80 SAID FOR DECADES. THE SPENT FUEL IS THE ULTIMATE IN TERRORIST TARGETS.

P-159

CL-20/81 Years ago, when people spoke of some type of monitored, retrievable spent fuel storage, they meant monitored, so repairs could be made by remote control if needed, and retrievable so problems could be addressed - no one in their worst nightmares with any sense, ever imagined that a bunch of nuclear bozos would be allowed to stick the most deadly stuff known to humanity in a cement and metal barrel and stick it outside in plain view. Spent fuel is the stuff (ALL TOGETHER NOW...) that the Department of Energy has been charged with trying to contain for approx. 10,000 years removed from the biosphere, after which it becomes the radioactive blob from hell under whatever piece of dry land they stick it. That assumes they can contain it for 10,000 years, which I doubt. I have many concerns with the Yucca Mountain site. I will not elaborate on here, but will mention that the "dump it on the Native Americans" idea is odious and immoral in the extreme. Yucca Mountain is sacred to them. That having been said, the site is already contaminated due to fallout from the weapons tests, and Nevadas belated concern about radioactive issues is hypocritical and distasteful, as this is the state that did not give a damn that hundreds of nuclear tests were conducted on Indian

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CL-20/82 land (The Western Shoshone Nation, AKA the Nevada Nuclear Test Site) that blew radioactive fallout across the nation causing serious illness, birth defects and cancers, besides doing the same to some nearer the site in Nevada. The only thing Las Vegas worried about, was if the tests shook their gambling tables according to press reports. When the wind blew towards Las Vegas they tried not to test. For Nevada to now whine that they don't see why they should get the spent nuclear fuel as they have no reactors - power reactors - is obscene, considering that a huge Curie quantity of the spent fuel was generated making/creating the plutonium and the tritium for the nuclear weapons most of them supported and didn't care that the fallout dumped on their fellow planetary citizens. The fact that there were, and are, some small groups who were, and are, against the weapons and the testing and the horrors of nuclear power does not, LATER the fact that the State did not protest. The States current protests, even if valid for other reasons; ring hollow against that history of nuclear collaboration, when they use the "no power reactor" excuse to keep the waste out. It is time history was set straight.

CL-20/83 The NRC in this Draft says p. D-2 that the temporary storage or future permanent disposal of spent fuel at a site other than the reactor site is not within the scope of this Supplement. Why the hell not ? It MUST BE, OTHERWISE THIS DRAFT IS EVEN MORE MEANINGLESS. THE SPENT FUEL IS THE MOST SERIOUS ISSUE THERE IS.

CL-20/84 ANYONE WHO DOES NOT UNDERSTAND THAT SPENT FUEL CANNOT BE LEFT WHERE IT IS ON SITE, IN POOLS OR ISFSI'S BEYOND A VERY LIMITED NUMBER OF YEARS, BUT MUST BE PLACED DEEP UNDERGROUND, IN A DRY LOCATION, GEOLOGICALLY AS SOUND AS POSSIBLE, MONITORED FOR ETERNITY, DOES NOT UNDERSTAND RADIATION OR THE NUCLEAR ISSUE AND SHOULD NOT BE WORKING FOR THE NRC. NRC MUST BITE THE PROVERBIAL BULLET AND SET THE TIME WHEN THE SPENT FUEL SHOULD ALL BE REMOVED OFFSITE AS NO LATER THAN TWO YEARS AFTER THE LAST CORE OFFLOAD HAS SPENT TEN YEARS IN THE SPENT FUEL POOL, I.E. FROM SPENT FUEL REMOVED FROM THE REACTOR INTO THE SPENT FUEL POOL AND THEN THE TEN YEAR "COOL DOWN" PLUS TWO YEARS, (A SAFETY MARGIN), AFTER WHICH IT MUST BE MOVED. IF SUCH A DEADLINE IS NOT DECIDED, AND SET, COMMUNITIES ARE GOING TO BE STUCK WITH

IT , WITH AWFUL CONSEQUENCES.

The "Mobile Chernobyl" issue - the dangerous moving of the spent fuel to a REPOSITORY , can be somewhat alleviated by addressing the concerns people

CL-20/85 have, instead of ignoring them, as follows : The Draft shows the awful DOT and NRC regulations for transport and radiation levels allowed p. 3-14, these should be changed to be massively lower, this can be done by better shielding and more shielding and the transport of fewer assemblies per cask or fewer rods per cask, and shielding that is thick enough that anti-tank weapons would not penetrate through to the fuel. Disguising the shipments is not an option due to the size of the casks, therefore far stricter security i.e. military escorts and the sealing off of roads ahead of transports would be a

CL-20/86 must. The NRC needs to pass rules on these issues, and put out orders for more and better transport casks and vehicles. All shipments of LLW should also fall under these better packaging and shielding standards. If the NRC does not address all these issues as part of decommissioning, future generations (that means YOUR children and grandchildren) are going to die due to NRCs lack of

CL-20/87 actions today. It is murderous that potential radiological impacts following lice nsing/license termination that are related to activities performed during decommissioning are not in the Supplement - this allows the licensee to slowly murder a community as the radiological criteria for license termination

CL-20/88 by NRC was woefully inadequate anyway. The NRC must continue to monitor sites FOREVER after license termination in case of sudden increases in radiation levels from a source on the site no one had either considered or knew was

CL-20/89 there. All sites should have audible(sirens) alarms that are triggered during decommissioning , and after decommissioning, when monitors exceed the EPA levels EPA allows, but reduced below what EPA allows to give an advance warning.

Such audible alarm systems are absolutely vital also during the the time radioactive spent fuel is still on the site, these alarms should be at various locations onsite, including next to the spent fuel pool and one above it, and next to an ISFSI/cask area and suspended on a wire or pole above it. The alarms should be audible miles offsite via relay loudspeakers.

CL-20/90 Under "Dose to members of the public" p. G-19, and following pages, the doses to the public are listed in the usual deceptive and innacurate manner.

CL-20/91 The radioactive material releases is not released in stringently controlled conditions, technical specifications are often violated, monitoring is only

CL-20/92 done at select locations and frequently monitors don't work, emissions are allowed to be averaged out to make them appear less, and there is no independant

CL-20/93 monitoring and utilities do and say whatever they please. Tritium can't be

CL-20/94 contained. The direct gamma radiation coming off the plants to the public is the equivalent of a continuous X-ray emanating from their midst. No X-ray is "negligable". (This sort of garbage was probably written by someone who is

CL-20/95 not a medical proffessional) . Often the plants DO NOT HAVE TO REPORT THEIR RELEASES UNTIL THOSE RELEASES REACH A CERTAIN LEVEL, IT DEPENDS WHAT THEIR

CL-20/96 LICENSE STATES. FOR THE NRC TO HAVE USED DATA FOR SOUTHERN COMPANY'S PLANT HATCH IS SICKENING - WHEN HATCH HAD THEIR DISASTROUS SPENT FUEL POOL SPILL, DID ANYONE ADD THE EXTRA DOSES AND CONTAMINATION IN ? THIS IS THE SAME HATCH

CL-20/97 WITH OVER 1200 WORKER CONTAMINATION EVENTS IN ONE YEAR. WHEN YOU CALCULATED THE RADIO-IODINES, DID YOU ADD IN THE HUGE RADIO-IODINE RELEASE OFF PLANT FARLEY THAT WENT OVER GEORGIA ?

CL-20/98 The point is, that no one asked to be exposed to ANY dose of radiation, and most people in surrounding communities don't even know they are being exposed, or if they know, they think they are being protected because they think there

CL-20/99 is a safe level of radiation, when of course even the NRC admitted back in the late '70's that there was no safe level.

CL-20/100 Perhaps most disgusting is that under "Consequence of Potential Accidents" p. I-16 the impression given is that spent fuel pool accident risks are low, when in fact NRC's own cited document shows, hundreds upon hundreds would die and also many spent fuel pools were highly vulnerable to catastrophic accident due to earthquakes and a lot more besides - spent fuel pool accidents would have terrible consequences. The fact that licensees determined that basically even if the damned site was hit by a meteor and a nuclear bomb and a

and a hurricane all at the same time (obviously I am being sarcastic) nothing would happen and there would be "no dose consequence" is to be expected as the licensee analyses are a bad joke.

CL-20/102 THE NRC SHOULD READ ITS OWN DOCUMENTS AND THE FAMOUS "CRAC-2 " REPORT DONE BY SANDIA LABS, THE NRC AND THEN CONGRESSIONAL OVERSIGHT BECAUSE TO PRESENT DATA TAKEN FROM LICENSING-BASIS DOCUMENTS WHICH HISTORICALLY HAVE DOWN-PLAYED ANYTHING THAT COULD HAPPEN IS OUTRAGEOUS, AND IF THERE IS STILL FUEL IN THE REACTOR AND A LOSS OF WATER COOLANT HAPPENS, EVEN IF THE REACTOR HAS BEEN SHUTDOWN RECENTLY, THERE WILL BE A MELTDOWN.

CL-20/101 I challenge any licensee and any NRC staffer, to walk into the area where the spent fuel pool is after the water has drained from the spent fuel pool, and try and refill the spent fuel pool with a garden hose (that is what they thought they'd do at the Georgia Institute of Technology Reactor) and see how well they can "mitigate" the situation before "offsite dose consequences could occur" -- they'd be dead before they could pick up the hose. To say that such an accident could be mitigated is the height of deception.

CL-20/103 On p. M-2 it says., under the glossary , under Background Radiation, that "the typically quoted US average individual exposure from background radiation is 360 mrem per year" It may be typically quoted, but it is a blatant LIE. For example, typical background radiation in Georgia is 42 mrem year according to the State (which recently upped it a notch probably due to the radioactive fallout on the State from nuclear power plants and the Savannah River Nuclear

CL-20/104 Site on its borders.) The definition of CONTAMINATION is also a LIE, in that it states that something is contaminated if it's in excess of "acceptable

CL-20/105 levels". There are no "acceptable levels" - the public does not accept any level of radioactive contamination -- plutonium, cobalt-60, Strontium-90 etc. or

CL-20/106 tritium ,radioactive iodine and so on and on - Contamination means : that some thing/someone etc. has been brought into contact with something that defiles or pollutes it etc. -- go look the word up - NRC must stop redefining words and lying about their meaning.

CL-20/107 What the NRC decides to do concerning decommissioning, is what the following

generations of children, wome, men, plants, animals, insects, birds, fish - all life, is going to suffer from, and die by. A small bunch of (mainly) men in an office complex in Washington, along with a few cohorts elsewhere, plus an immoral multinational polluting industry (in the business for money only) are seemingly se tting a set of criteria that will impact the whole world to no

CL-20/108 good end and cause great misery , in this Draft. Have you all no shame ?

CL-20/109 The radioactive components, parts, liquids i.e. anything part of or to do with or emanating from the structures and the site MUST NEVER BE RE-CYCLED, OR RE-USED.

CL-20/110 NRC MUST IMMEDIATELY CEASE ALLOWING , OR THINKING OF ALLOWING, RADIOACTIVELY

CL-20/111 CONTAMINATED SOIL TO BE RE-USED FOR ANYTHING. IT MUST FORBID THE MELTING, SMELTING OR RE-USE OF RADIOACTIVELY CONTAMINATED METALS, PIPING, PLASTICS, WOOD, (INCLUDING

CL-20/112 FORBIDDING THE BURNING OF WOOD) , ASPHALT, AND SO ON. IF NRC, EPA, THE DOE AND OTHERS DO NOT STOP THIS INSANE RUSH TO RE-USE, RECYCLE, DUMP AND COVER ETC. NUCLEAR MATERIALS, RADIOACTIVE MATERIALS, ACTIVATED MATERIALS ETC. , WITHIN FIFTY YEARS NO LIVING BEING WILL BE BORN WITHOUT SOME TYPE OF DEFORMITY, GENETIC ABNORMALITY, CHROMOSOME ABERRATION ETC. AND THE IMMUNE SYSTEMS OF EVERY LIVING BEING WILL BE SERIOUSLY COMPROMISED DUE TO RADIATION SUPPRESSING THE IMMUNE SYSTEM RESPONSE, AND ALL BECAUSE WE WILL BE COMPLETELY ENGULFED IN A MIASMA OF MAN-MADE, OR MAN ENHANCED, RADIOACTIVE CONTAMINATION..

I have written this on and off over a series of days after finding out

CL-20/113 the comment period had been extended. I recognize that it has probably been a waste of my time and will be ignored, as usual, therefore I am not bothering to write it again with every paragraph in the right place.. In any event I speak, read and write three languages and the grammar and spelling in all of them suffers somewhat -

CL-20/114 but it is the content that matters. The fact is, wherever this radioactively contaminated refuse winds up - from spent fuel to contaminated rags - it can't be contained forever and will reach the environment, which is why it must go to a remote location, below ground. (none of this idiot parking lot out in Utah or Nevada cask storage either) in dry, geologically sound (as far as possible in a moving planet) location where monitoring could alleviate problems that arise prior to reaching the public and wildlife. NRC must recognize that this solution --

while not a perfect solution, as there is no perfect solution to the nuclear waste issue, - is the solution that has been gone back to repeatedly over the decades, after thousands of studies contemplating what to do with the waste failed to identify anything better, or safer. What NRC and industry are proposing in this Draft, flies in the face of the thousands of prior studies by some of the worlds most renowned people who understand the horror of the dilema, and their conclusions. Leaving all this contamination on sites around the nation to contaminate and kill hundreds of communities is simply barbaric

CL-20/115 and must be stopped at all costs. Furthermore, no new nuclear plants should be allowed or built as they will just add to the existing contamination, and all operating plants should be shutdown to stop further "waste" – such as plutonium–

CL-20/116 generation. None should be re-licensed – the NRC should be ashamed of relicensing. This Draft is an absolute horror – for future generations who will suffer if

CL-20/117 this goes through as proposed, I would point out that on pages C-1 and C-2 are the names of those responsible for this abomination for reference in case of future lawsuits, so the public should make a note of that (this is, after all public record, what I have written). Plus the Utility in question and the ever helpful nuclear pushers at the NEI, should be remembered too, for their contribution to the nuclear nightmare.

CL-20/118 There is still time to correct all the serious problems in the Draft, still time for the NRC to turn from the path of wickedness and ruin the Draft Supplement and Gods will lead to if passed as is. Remember the Creator. Do not allow the further desecration of the world, the NRC will also be accountable to God one day for what it allows to be done to God's Creation. Think on that, and correct this Draft to the better.

Pamela Blockey-O'Brien.

Pamela Blockey-O'Brien.

Copies to: EPA, GEORGIA DNR/EPD, USFWS, GEORGIANS FOR CLEAN ENERGY, U.S. ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE, CENTERS FOR DISEASE CONTROL AND OTHERS.

11/9/01
66 FR 56721
(21)

From: "Sharon Guynup" <sguy@cybernex.net>
To: <dgeis@nrc.gov>
Date: 1/19/02 4:37PM
Subject: comments on Decommissioning US Nuclear Power plants

CL-21/1 I am violently opposed to the Nuclear Regulatory Commission's proposal to further relax its decommissioning requirements for nuclear power reactors. This is nothing but a sellout to the nuclear industry-- which puts citizens at risk--with no recourse in case of liabilities.

This is wrong and dangerous.

Thank you for your time.

Sharon Guynup
Hoboken, NJ

Template = ADM-013

E-RIDS = ADM-03
Add = M. Hasnik (MTH2)

11/9/01

66FR56721

22

From: <sublimation@webtv.net>
To: <dgeis@nrc.gov>
Date: 1/19/02 10.57PM
Subject: decomissioning reactors: environmental impact supplement 1

CL-22/1 This is ridiculous!

http://community.webtv.net/sublimation/DisregardAllAdsHere

Template = ADM-013

E-RFDS = 03
Add = M. Masnik (MTM2)

11/9/01
66 FR 56721
(23)

From: "Fred Long" <ajlong999@earthlink net>
To: <dgeis@nrc gov>
Date: 1/20/02 8 59AM
Subject: DECOMMISSIONING NECLEAR FACILITIES

CL-23/1 Has the NRC no common sense at all?
Releasing radioactively contaminated materials into daily consumer use and commerce and unregulated disposal is a direct assault on humanity.
Don't let this happen.
AJ Long
20550 Earl St
Torrance CA 90503

11/9/01
66 FR 56782
(24)

From: "rsja" <rsja@email msn com>
To: <dgeis@nrc gov>
Date: 1/20/02 2 03PM
Subject: Public comment on USNRC Decommissioning US Nuclear Power Reactors

To. Chief,
Rules and Directives Branch
Division of Administrative Services
Mailstop T 6 D 59
US Nuclear Regulatory Commission
Washington DC 20555-001

CL-24/1 I am appalled at the NRC's draft of decommissioning requirements for nuclear power reactors. The requirements should be made stricter not more relaxed!!!!!!!!!!!! I oppose the use of "Generic" listing of
CL-24/2 issues. I support "Site Specific" listing so that local communities can still raise issues they have.
CL-24/3 I support the designation of environmental justice and endangered species issues as site-specific, NOT generic.
CL-24/4 I oppose Rubblization but support its designation as site-specific.
CL-24/5 I Firmly oppose the "release" of radioactively contaminated materials into daily consumer use and commerce and unregulated disposal.

CL-24/6 This is common sense people. You need to start doing what is safest and in the best interest of the people of the United States and its land, NOT what is going to relieve the nuclear power companies of their responsibility to what they have created and profited off.

Citizen of the United States of America
Rachel Griffiths
2022 West Chicago Avenue
Chicago, IL 60622

Template = ADM-013

E-RIDS = ADM-03
Add = M. Hasnik (MTM2)

11/9/01
66 FR 56721
(25)

From: <EdRussel@aol com>
To: <dgels@nrc gov>
Date: 1/20/02 9 34PM
Subject: Decommissioning rule changes

Law Offices of
Edward T. Russell
725 Long Pond Road
Plymouth, MA 02360
508-224-2007

January 20, 2002

Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T 6 D 59
US Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Decommissioning Nuclear Power Reactors
Environmental Impact Statement Supplement 1

Dear Sirs:

I am a resident of, and practice law in, Plymouth MA. For years I have lived at peace with the neighboring Pilgrim nuclear plant. However, Sept 11 was an awakening for me and for many others in eastern Massachusetts.

CL-25/1 I strongly object to the proposed changes to the decommissioning rules. We have recently become more sensitive to the rules governing nuclear power plants, even their decommissioning Since these proposals were begun before September 11, I hope and expect that they will be dead on arrival at the Commission.

CL-25/2 The only rules changes that I want to see until spent rods are removed to Yucca Mountain are to stricter rules.

CL-25/3 Utility deregulation has put the ownership of these plants in hands that are not as responsible as they once were. Plymouth MA suffers financially because of the loss of tax revenue from the Pilgrim Plant - we cannot assume the

CL-25/4 additional risk these rules would place on us. Until the spent rods are removed from local nuclear power plants the decommissioning rules should be tightened, not loosened. Your proposal may have seemed reasonable earlier this year but we live in a very different world now It can no longer be business as usual at the NRC

CL-25/5 Many key issues that local communities face as reactors close and owners leave (liability-free) will be unchallengeable, because they are being listed

CL-25/6 as "generic" issues. I support the designation of environmental justice and endangered species issues as site-specific (not generic) and designation of Rubblization as site-specific.

CL-25/7 The proposed rules ignore radiation dangers after decommissioning The NRC

CL-25/8

Template = ADM-013 E-RIDS = ADM-03
Add = M. Masnik (MTN2)

CL-25/9 must incorporate offsite contamination in all evaluations of environmental impacts. The National Environmental Policy Act was written for a purpose, your proposed rules side step that purpose.

CL-25/10 You must not remove license amendment requirements when changing from an operating license to a nuclear materials possession-only license. I stand

CL-25/11 firmly against the "release" of contaminated materials into daily consumer contact and commerce or unregulated disposal.

CL-25/12 Deregulation has already had serious negative impact on local municipalities this will be just another blow

Sincerely,

Edward T. Russell

11/9/01

66 FR 56721

(26)

From: Dave Matthews <david matthews@sun.com>
To: <dgeis@nrc.gov>
Date: 1/21/02 10.52AM
Subject: Decommissioning Nuclear Power Reactors EIS Supp1

Dear Sirs,
I am writing to comment on the EIS supplement 1.

CL-26/1 In general, I am strongly opposed to the attempts to designate many issues as generic instead of site specific and thus to remove these issues form public review and comment.

CL-26/2 Specifically , I am opposed to the following proposals in the EIS:

NRC allows "rubblization" (crumbling the concrete reactor building) of nuclear reactors, without opportunity for public intervention until the action is completed.

CL-26/3 NRC allows portions of sites to be "released" from regulatory control before the whole site it released.

CL-26/4 NRC opens up two "entombment" options.

CL-26/5 NRC ignores radiation dangers after decommissioning is done and utility is relieved of liability.

CL-26/6 NRC ignores radiation exposures to children and other vulnerable members of the population and creates a fictitious highest exposed "critical group" based on unsubstantiated assumptions.

CL-26/7-9 NRC ignores radiation offsite and permits utilities to ignore it in decommissioning planning. I ask that the NRC incorporate offsite contamination into all evaluations of environmental impacts.

CL-26/10 NRC prevents the National Environmental Policy Act from applying to most of the decommissioning process.

CL-26/11 NRC redefines terms to avoid local, site specific opportunity to question, challenge and prevent unsafe decommissioning decisions.

CL-26/12 NRC sets arbitrary and unsubstantiated (low, medium and high) environmental impact categories for each of the steps in decommissioning, to give the appearance that they have minimal effects, to justify not fully addressing them now and to prevent their inclusion in site-specific analysis.

CL-26/13 NRC is removing the requirement for a license amendment when changing from a nuclear power operating license to a nuclear materials possession-only license. (With no license amendment, there is no opportunity for public challenge or adjudicatory processes)

CL-26/14 NRC is attempting, with this supplement, to legally justify the removal of the existing opportunities for community involvement and for legal public intervention until after the bulk of the decommissioning has been completed. This includes such activities as flushing, cutting, hauling and possibly rubblizing of the reactor.

Template=ADM-013

E-RIDS=ADM-03
Add=M. Masnik (MTM2)

NRC states that the portion of the decommissioning regulations (10 CFR 20 section E and its Environmental Impact Statement, NUREG 1496) that set the 25, 100 and 500 millirems per year allowable public dose levels from closed, decommissioned nuclear power sites, are not part of the scope of this Supplement

NRC defines decommissioning, in part, to include the "release of property for unrestricted use. .." and the "release of property under restricted conditions..."

CL-26/15 I stand firmly against the "release" of radioactively contaminated materials into daily consumer use and commerce or unregulated disposal.

Thank you
David Matthews

Letter 27, page 1

11/9/01
66 FR 56721
(27)

From: "Klaus Schumann" <jayklaus@email msn com>
To: <dgeis@nrc.gov>
Date: 1/21/02 12 52PM
Subject: comment to nureg 5086

Dear NRC,

CL-27/1 I do not support any attempt of your agency to narrow the scope of site-specific issues by declaring them to be generic.

CL-27/2 While the 9/11 events may call for some more secrecy, in most cases it's a matter of "closing the gates long after the horses are gone". Instead you should adopt a policy of allowing more public participation to ensure public confidence in your process!

CL-27/3 Re 9/11: I direct you to a quote from a recently published German report concerning the vulnerability of the Castor containers to terrorism: "the fact that all the technical data used in the report can ve accessed by terrorists does not imply that a more restrictive policy towards information is required. Rather, it should be regarded as an argument against the use of a technology which is, at the time, hazardous and complex to a large degree, creating a conflict between the necessary societal discussion on the one hand and the protection of society from terrorist attacks on the other." Compare: www bund.net/themen/energiepolitik/StudieCASTORTerror rtf If we eliminate the necessary public discussion the terrorists will have won!

KLaus Schumann

Template = ADM-013

E-RIDS = ADM-03
Add = M. Masnik (MTM2)

11/9/01
66FR56721
(28)

From: Dennis Larson <larsondf@yahoo.com>
To: <dgeis@nrc.gov>
Date: 1/21/02 1:36PM
Subject: reactor decommissioning

Re: decommissioning nuclear reactors

CL-28/1 Issues common to the process of decommissioning nuclear reactors should be raised with every reactor being decommissioned, not excluded from every specific reactor being decommissioned.
These common issues have not been resolved.

Dennis Larson

Template=ADM-013

E-RIDS=ADM-03
Add=M. Masnik (MTH2)

11/9/01
66FR56921
(29)

From: <Tilkel@aol com>
To: <dgeis@nrc.gov>
Date: 1/21/02 7.32PM
Subject: Decommissioning

Dear Mr. Geis:

CL-29/1 CL-29/2 CL-29/3 There are still radioactive dangers after decommissioning. I oppose the concept of rubblization as it is very dangerous; I oppose the release of radioactive contaminated materials into daily consumer or commercial uses. That is an idea that is insanely dangerous. Would you eat off a fork that contains radioactive mataerial? Why would anyone?

Sincerely,

Martin Kellerman

Template = ADM-013

E-RIDS = ADM-03
Add. = M. Masnik (MTM2)

YANKEE ATOMIC ELECTRIC COMPANY
19 Midstate Drive, Auburn, Massachusetts 01501

CONNECTICUT YANKEE ATOMIC POWER COMPANY
362 Injun Hollow Road, East Hampton, Connecticut 06424-3099

December 26, 2001

BYR 2001-084
CY-01-199

11/9/01
66FR56721

(30)

Chief, Rules and Directives branch
Division of Administrative Services
Mailstop T 6 D 59
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Haddam Neck and Yankee Rowe Plant
Comments on Draft Supplement to GEIS

Yankee Atomic Electric Company (YAEC) and Connecticut Yankee Atomic Power Company (CYAPCO) appreciate the opportunity to provide comments on the draft supplement 1 to NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities".

In a letter dated April 25, 2001[1], CYAPCO submitted a response to a Nuclear Regulatory Commission (NRC) request for additional information to support development of the Generic Environmental Impact Statement (GEIS) supplement. Many of these comments were incorporated in the draft
CL-30/1 supplement. In general the draft supplement meets the goal of updating the GEIS to current decommissioning practices and dismantlement options. We have reviewed the draft supplement and offer specific comments contained in the attachment.

If you have any questions regarding this submittal, please contact Gerry van Noordennen at (860) 267-3938.

[1] CYAPCO letter CY-01-076 to U.S. Nuclear Regulatory Commission, "Response to NRC Request for Additional Information to Support GEIS Supplement", dated April 25, 2001.

Template = ADM-013

E-RIDS = ADM-03
Add = M. Masnik (MTM2)

Sincerely,

Kenneth J. Heider
Vice President of Operations & Decommissioning

cc. H. J. Miller, NRC Region I Administrator
J. E. Donoghue, Senior Project Manager, Haddam Neck Plant
R. R. Bellamy, Chief, Decommissioning and Laboratory Branch, NRC Region I
Document Control Desk, U.S. Nuclear Regulatory Commission
D. C. Scalletti, U.S. Nuclear Regulatory Commission
Paul H. Genoa, Nuclear Energy Institute
E. L. Wilds, Jr., Director, CT DEP Monitoring and Radiation Division

U. S. Nuclear Regulatory Commission
BYR 2001-084/CY-01-199 / Attachment 1 Page 1

YAEC & CYAPCO Comments on the draft supplement to the GEIS

CL-30/2 1. The Figure 1-1, "Decommissioning Timeline" should also reflect the 60 year window, mentioned in 10CFR50.82(a)(3), that starts from the permanent cessation of operation.

CL-30/3 2. Revise the first part of the last sentence on page 1-5 to read:

> If a licensee chose to operate the ISFSI under a Part 50 license, they could choose to continue under the Part 50 license, or by way of license amendment request, ...

CL-30/4 3. Delete the discussion of "Rubblization" on page 1-7 and delete the term "Rubblization" in the Glossary (Appendix M). Maine Yankee first utilized this term in a January 13, 2000 letter which served to submit their License Termination Plan (LTP). On June 1, 2001, Maine Yankee filed revision 1 to their LTP. On August 13, 2001, Maine Yankee filed revision 2 to their LTP. In their current LTP, Maine Yankee does not propose to use "Rubblization" and no longer utilizes the term. No licensee is currently pursuing the "Rubblization" concept as described in Maine Yankee's original LTP submittal.

The term which most accurately describes the approach which licensees are currently pursuing is "concrete backfill". Connecticut Yankee described the process as follows in section 4.3.1 of our LTP submitted on July 7, 2000:

> Concrete from contaminated structures will be remediated to a level meeting the radiological criteria for unrestricted release of the site. After completion of final status surveys and absent any findings during NRC inspections, concrete building debris from decontaminated structures may be used as backfill and placed into the remaining subsurface building foundations.

CL-30/5 4. Under the description of the Turbine building (on page 3-6) revise the last two sentences to read:

> Primary coolant is not circulated through the turbine building systems in PWRs. However, it is not unusual for the turbine building to become mildly contaminated during power generation at PWRs.

CL-30/6 5. Add the following sentence to the first paragraph in section 3.1.4:

> Most of the contamination in the reactor coolant system is from the activation of corrosion products and not fuel.

U. S. Nuclear Regulatory Commission
BYR 2001-084/CY-01-199 / Attachment 1 Page 2

CL-30/7 6. Revise the second to last sentence on page 3-15 to read:

> The entire structure (or portions) must be removed.....

CL-30/8 7. The last sentence on page 3-15 is only true if corrosion products are included. The sentence should be revised to read:

> If corrosion products are included, the radioactive decay.....

CL-30/9 8. The last two paragraphs on page 3-15 need to be rewritten. The discussion of contamination and activation needs to be clarified. If requested, CYAPCO will work with the Commission to rewrite this text.

CL-30/10 9. Yankee Rowe should be added to the list of plants mentioned in the second to last paragraph of page 3-26. The Yankee Nuclear Power Station was one of the plants in the AEC's Demonstration's Program. Yankee Rowe's license number is DPR-3.

CL-30/11 10. The second to last paragraph on page 3-32 discusses the creation of nuclear islands. Nuclear islands are not primarily created because of security reasons. The real benefit in creating nuclear islands is to not interfere with spent fuel storage. The purpose for creating a nuclear island is to provide a facility for the safe long-term storage of spent fuel, which is independent of the remainder or the rest of the facility. The purpose of the modifications is to divorce the spent fuel cooling function from dependence on systems which must be dismantled as part of the overall decommissioning process.

CL-30/12 11. Expand the discussion about Stage 4 of the decommissioning process. This discussion should contain as much description as the descriptions under stages 1 through 3.

CL-30/13 12. Delete "groundwater" from the first sentence in section 4.3.3.4. Releases are not made to groundwater under NPDES permits. NPDES discharge points discharge to surface water locations.

Exelon Nuclear
200 Exelon Way
Kennett Square, PA 19348

www.exeloncorp.com

Exelon Nuclear

11/9/01
66 FR 56721
(31)

December 28, 2001

Secretary
U.S. Nuclear Regulatory Commission
Attn: Rulemakings and Adjudications Staff
Washington, DC 20555-0001

Subject: Comments Concerning Draft Supplement 1 to NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities" (66FR56712, dated November 9, 2001)

Dear Sir or Madam:

This letter is being submitted in response to the NRC's request for comments concerning Draft Supplement 1 to NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities" which was published in the Federal Register (i.e., 66FR56712, dated November 9, 2001). The NRC is proposing that this Supplement updates information in the existing 1988 GEIS relating to pressurized water reactors, boiling water reactors, and multiple reactor stations. Additionally, this Supplement goes beyond the 1988 GEIS by considering high-temperature gas-cooled reactors and fast breeder reactors. The NRC's intent is that this Supplement be used to consider, in a comprehensive and generic manner to the extent practicable, the environmental impacts of radiological decommissioning of nuclear reactor facilities by incorporating updated information, regulations, and analyses.

Exelon Generation Company, LLC (Exelon) appreciates the opportunity to comment. Generic and specific comments follow in Attachments 1 and 2, respectively. If you have any questions, please do not hesitate to contact us.

Very truly yours,

for

Michael P. Gallagher
Director, Licensing and Regulatory Affairs
Mid-Atlantic Regional Operating Group

Attachments

Template = ADM-013

E-RIDS = ADM-03
Add = M. Masnik (MTM2)

ATTACHMENT 1
Generic Comments on NUREG-0586 Draft Supplement 1

CL-31/1 1. Exelon believes the proposed Draft Supplement correctly concludes that most of the environmental issues assessed result in impacts that are generic and SMALL for all plants. We reach this conclusion based upon our experience decommissioning one BWR (Dresden 1), two PWR's (Zion Station), one HTGR (Peach Bottom 1), and our observation of other industry decommissioning projects We have not seen to date – and currently do not expect to find – environmental impacts different from those addressed and bounded by this Supplement to the GEIS.

CL-31/2 2. Exelon continues to maintain that providing guidance, which addresses environmental issues generically, provides the highest standard the public at large can use effectively to challenge industry to return power plant sites to beneficial use upon facility retirement.

CL-31/3 3. The Supplement properly addresses the ENTOMB decommissioning option Issues related to the ENTOMB option after the facility has terminated its NRC license and entered the entombment period are outside the scope of this GEIS. Power reactor entombment is not construction of a LLW disposal facility – it is properly classified as a decommissioning scenario, which creates an assured storage facility for radioactive material to decay in place, until it no longer represents a hazard considering future public use of the site. The clear distinction between entombment as a decommissioning scenario and a LLW disposal facility may be found in the ability to reuse the site in the future for other purposes. Regulation governing LLW disposal facilities does not contemplate future use of the site, restricted or unrestricted. Future use of an entombed site will be dictated by the dose-based performance criteria found in 10 CFR Part 20, Subpart E.

CL-31/4 4. The Supplement improperly addresses rubblization by stating it will require a site-specific analysis at the time the license termination plan is submitted Rubblization should be addressed generically as a part of the decommissioning process. The NRC should continue to maintain that to the extent that 10 CFR Part 20, Subpart E dose performance criteria are met – and that decommissioning has been performed using the ALARA principal, rubblization has a SMALL environmental impact.

CL-31/5 5. The Supplement incorrectly addresses the impact on the SAFSTOR scenario due to the time gap between cessation of operations and decommissioning activities. The Supplement expects the time gap will result in a shortage of personnel familiar with the facility when decommissioning activities commence. Our own experiences have shown us that both DECON and SAFSTOR decommissioning scenarios can be conducted in a safe and efficient manner. Regarding the familiarity of the facility at the end of licensed life, whether the plant begins decommissioning immediately or waits for some defined period – the most difficult aspect is retrieving records from the earliest days of operation. Recently retired facilities have taken the appropriate step of preparing a site historical assessment – documenting the operating years of the facility. This historical assessment will guide the decommissioning process whether it begins immediately upon retirement or 50 years later.

ATTACHMENT 2
Specific Comments on NUREG-0586 Draft Supplement 1

CL-31/6 1. On Pg 3-17 there is a discussion of the advantages of the DECON alternative for decommissioning. One advantage of DECON is not discussed and should be Generally speaking the shorted lived nuclides are easier to detect because of their beta/gamma emissions, versus the alpha emissions of longer lived nuclides. The difficulty of detecting the alpha emitters will increase analysis costs and increase the difficulty of performing surveys. Ultimately the cost of providing RP coverage and of performing the Site Characterization and Final Status Survey will also be increased.

CL-31/7 2. On Pg 3-19 the discussion of the SAFESTOR option assumes that there is a savings associated with less Solid RW disposal costs. However they do not consider that the current NRC guidance for release of material includes a no detectable criteria. In order for the reduction of Solid RW to be achieved, significant quantities of plant materials would need to be released from the site. The current regulations do not support this assumption.

CL-31/8 3 On Pg 4-9 the NUREG concludes (Sec 4 3 2.4) that the environmental impact of water usage will be small. In the evaluation they consider the anticipated reduction in water usage for cooling in the condenser. This conclusion appears reasonable, however the analysis should also consider the environmental effects of the loss of heat provided by cooling water discharged to a closed lake or pond system that is a habitat for aquatic animals and vegetation. Many nuclear facilities are on natural or man-made bodies of water making this environmental effect generic in nature.

CL-31/9 4 On Pg 4-16 the NUREG concludes (Sec 4.3 4 4) the environmental impact of air emissions will be small In the evaluation they did not consider that many sites use extraction steam to provide plant heat in the winter months The shutdown of the reactor means that Aux Boilers will be operated for longer periods to provide heating steam. This needs to be considered in the NUREG or many facilities will need to address this issue in their PSDAR

CL-31/10 5 On Pg 4 –29 the NUREG (section 4.3 8.3) concludes that it is not necessary to update estimates for collective dose due to decommissioning activities. This is an important conclusion that is supported by the current range in collective dose that decommissioning plants have experienced. Any change to this conclusion needs to be well supported by actual data and needs to be thoroughly studied to identify all potential impacts.

CL-31/11 6 Table 4 –1 on page 4 –30 is misleading The totals given include 100 rem of transportation dose that is not tracked by the facility undergoing decommissioning. It also does not include dose incurred during construction of a Spent Fuel Pool Island or in support of a dry cask storage campaign. A footnote should be added explaining these differences

CL-31/12 7. Table 4-3 lists the decommissioning cost of Peach Bottom Unit 1 to be 54 million dollars (in January 2001 dollars) In our letter submitted on March 30, 2001, in accordance with

10CFR50.75 the decommissioning cost estimate for Peach Bottom Unit 1 reported in beginning of year 2001 dollars is 65 4 million dollars Table 4-3 should be changed to reflect the latest cost estimate.

CL-31/13 8. Table 4-4 lists the decommissioning cost of the high-temperature gas-cooled reactor in SAFSTOR (Peach Bottom Unit 1) to be 54 million dollars (in January 2001 dollars). In our letter submitted on March 30, 2001, in accordance with 10CFR50.75 the decommissioning cost estimate for Peach Bottom, Unit 1 reported in beginning of year 2001 dollars is 65 4 million dollars. Table 4-4 should be changed to reflect the latest cost estimate.

CL-31/14 9. Table F-1 lists the total site area for Peach Bottom Unit 1 to be 620 acres. 620 acres is the total site area reported in the Peach Bottom Unit 2 and 3 Updated Final Safety Analysis Report However, Table F-2 reports the total site area for Peach Bottom Units 2 and 3 to be 618 acres. Table F-2 should be changed to reflect the total site area for Peach Bottom Units 2 and 3 to be 620 acres.

CL-31/15 10 Table I-3 incorrectly lists site flooding as the only accident analyzed for Peach Bottom Unit 1 in the documents referenced in Appendix I for Peach Bottom Unit 1. The additional accidents analyzed for Peach Bottom Unit 1 that should be added to Table I-3 are:

- Release of helium coolant under containment breach (open penetration to containment) for accidents involving radioactive materials (non-fuel-related) on page I-9
- Fire inside reactor vessel under fire for accidents involving radioactive materials (non-fuel –related) on page I-10.

CL-31/16 11. On page L-6 of Appendix L, line 4 refers to criticality accident monitoring requirements described in 10CFR7.24 Criticality accident monitoring requirements are described in 10CFR70 24. This typographical error should be corrected.

CL-31/17 12. On page L-6 of Appendix L, line 17 refers to 10CFR50 73 as requiring a licensee event report within 30 days 10CFR50 73 was recently revised to require a licensee event report within 60 days This change should be made to Appendix L.

CL-31/18 13 While the Supplement addresses two entombment options stating they have prepared as extreme cases to envelop a wide range of potential options, there should be additional language early in Section 3 2.3 ENTOMB clarifying that utilities are likely to develop entombment scenarios based upon their site specific needs.

CL-31/19 14. All spent fuel at Dresden Unit 1 will be moved to dry storage on site by the end of the first quarter of 2002. This change needs to be reflected in Table 3-2.

11/9/01
66FR56721
(32)

From: <GEORGNBAY@aol.com>
To: <dgeis@nrc.gov>
Date: 1/24/02 9.17AM
Subject: relaxing standards

Dear Sir/Madame,

CL-32/1 I urge you to stop any further relaxing of nuclear power reactor decommissioning requirements. Enough is enough. The suggestions you are making toward relaxing further standards will create massive public health
CL-32/2 and economic problems. Just one example is letting the concrete reactors
CL-32/3 erode naturally which is extremely unsafe. And to ignore radation concerns to the unsuspecting public health is criminal.
It is out rageous to allow the reactors to be liability-free. That is like saying to the consumer " Your money AND your life". We have paid and paid for nuclear power and we all know it is the biggest welfare mother of all time.

Yours in concern

Susan Clark

Template=ADM-013

E-RIDS=ADM-03
Add = M. Mysnik (MTHR)

From: Margaret Nagel <formargaretn@earthlink.net>
To: <dgeis@nrc.gov>
Date: 1/24/02 1 51PM
Subject: Weakening Requirements for Decommissioning US Nuclear PowerReactors

11/9/01
66FR56721
(33)

From:

Margaret Nagel
631 Hinman Ave
Evanston, IL 60202-2514

To:

Chief, Rules and Directives Branch/Division of Administrative Services
Mailstop T 6 D 59
US Nuclear Regulatory Commission
Washington, DC 20555-0001

January 24, 2002

CL-33/1 In setting requirements for decommissioning US nuclear power reactors, please bear in mind other things besides the needs of Richard (Enron) Cheney, Halliburton Inc., Brown & Root, and other powers that be. Long after these miserable "powers" have crumbled away, your children and grandchildren

CL-33/2 and mine, and their descendants, will have to live in this world. The nuclear power industry was a colossal mistake to begin with, as we all know.

CL-33/3 Most of us also realize that the immune systems of every living thing on this planet -- human systems included -- are becoming intolerably stressed by mounting (and synergisticaly interacting) levels of pollution of all

CL-33/4 sorts. To add to these levels by deliberately ignoring the dangers of radiation exposure is wantonly criminal. Those who do so will go down in history as villains of the worst sort: smug, obtuse, shrivel-hearted, deceiving, opportunistic, self-serving, cowardly, corrupt people who really

CL-33/5 ought to know better. I fail to see any moral difference between terrorists who fly planes into buildings, and bureacrats who are perfectly willing to

CL-33/6 expose whole populations to additional dangers from radiation. In the name of humanity and morality, you should all leave your jobs now in righteous protest at what you're being asked to do. Walk out. Say goodbye. Go work at Wal-Mart if you have to But don't recklessly endanger the health of this nation by acquiescing in these evil plans

I utterly oppose:

CL-33/7 1. "rubblization" with no opportunities for meaningful public intervention ahead of time

CL-33/8 2 allowing portions of sites to be released from regulatory control before the whole site is released.

CL-33/9 3 ignoring readiation dangers after decommissioning is done and utility is relieved of liability.

CL-33/10 4 ignoring radiation exposures to children and other vulnerable members of the population and creating a fictitious highest exposed "critical group" based on unsubstantiated assumptions.

Template - ADM-013

E-RIDS = ADM-03
Add = M. Mosnik (MTM2)

CL-33/11 5. ignoring offsite radiation and permitting utilities to ignore it in
CL-33/12 decommission planning NRC should incorporate offsite contamination into all evaluations of environmental impacts

I also utterly oppose:

CL-33/13 1. Preventing the National Environmental Policy Act from applying to most of the decommissioning process.

CL-33/14 2. Making most aspects of decommissioning "generic" rather than site-specific, so they cannot be legally reviewed or challenged at individual sites

CL-33/15 3. Redefining terms to avoid local, site-specific opportunity to question, challenge, and prevent unsafe decommissioning decisions.

CL-33/16 4 setting "low, medium, and high" environmental impact categories for each of the steps in decommissioning, to give the appearance that some things have negligible effects that don't warrant further consideration.

CL-33/17 5. removing the requirement for a license amendment when changing from a nuclear power operating license to a nuclear materials possession-only license, thereby eliminating the opportunity for public challenge or adjudicatory processes.

CL-33/18 6. attempting to legally justify the removal of the existing opportunities for community involvement and for legal public intervention until activities such as flushing, cutting, hauling and possibly rubblizing of the reactor are complete -- in other words, until the damage has irretrievably been done.

CL-33/19 7. stating that 10 CFR 20 section E and its Environmental Impact Statement, NUREG 1496, are not part of the scope of this Supplement.

CL-33/20 8 defining decommissioning, in part, to include the "release of property for unrestricted use" and the "release of property under restricted conditions" -- in other words, releasing radioactively contaminated materials into daily consumer use and commerce and unregulated disposal How can you contemplate such a thing!!!!!!!!!!!!!!

Sincerely,

Margaret Nagel

CC: Margaret Nagel <formargaretn@earthlink.net>, "Richard J Durbin" <dick@durbin.senate.gov>, "Peter G Fitzgerald" <senator_fitzgerald@fitzgerald.senate.gov>

11/9/01
66FR56732
(34)

From: "Liane Casten" <lcasten@interaccess.com>
To: <dgeis@nrc.gov>
Date: 1/24/02 3.40PM
Subject: NUCLEAR POWER PLANTS

CL-34/1 To even think that decommissioning nuclear power plants' regulations via presidential fiat is acceptable is beyond logic and reason.
CL-34/2 You are insuring the further deterioration of health for innocent civilians and this planet.
CL-34/3 Bush is stripping us all of those safeguards we all need to protect citizens--and this includes you. He has
CL-34/4 only corporate interests--the nuclear power industry being one. To enforce no liabilty after they leave is
CL-34/5 simply criminal. You do not need to further endanger our lives while the polluters go scott free..
Enough.
Liane Casten

Template-ADM-03

E-RIDS=ADM-03
Add = N. Hasoik (NTH2)

11/9/01
66 FR 56721
(35)

From: <little lamb@att net>
To: <dgeis@nrc.gov>
Date: 1/25/02 1 00PM
Subject: Public Comment=Shame on you!

Public Comment re: the U.S. Nuclear Regulatory Commission's (NRC) draft Decommissioning Nuclear Power Reactors Environmental Impact Statement Supplement 1.

Dear Nuclear Regulatory Commission,

CL-35/1 Please increase, rather than decrease, public participation in every single aspect of the planning, building, and running of Nuclear Power Plants. Please do this even if you don't want to.

The public, to you, may seem like a thorn in your side, something that gets in the way of your plans. But a democratic government should not seek to shut their people out of decisions that effect their lives. It is a very sad reflection on the state of our democracy that this seems to be precisely the aim of your draft regulations. -Don't you believe in democracy? Are you tired of playing by democratic rules if it means you can't win each and every time? Is democracy too inconvenient for you?

If you were busy doing the "right thing" you would be excited and proud to open your process to the public. If you were involved in an honest process, you would be eager to engage your opponents in debate about it. You would not have to stack the deck, hide your process, shut the people out. Shame on you! See if you have the courage to do the right thing! --- And have the courtesy not to send one of those dummy automatic replies!

Mary Kim
116 Pinehurst Avenue #C3
New York City 10033

212.923.7800 x 1303

Template = ADM-013

E-RIDS = ADM-03
Add = M. Hasnik (MTH2)

11/9/01
66 FR 56721
(36)

From: Donald Miller <d.w miller@csuohio.edu>
To: <dgeis@nrc gov>
Date: 1/25/02 5.56PM
Subject: NRC's supplement to NUREG-0586, re decommissioning

I have some questions.

CL-36/1 Why, in this same democracy that we hold up so proudly to the world, does the NRC seek to prevent public comment on the basic issue of public health in a nuclear world?

CL-36/2 If the NRC is confident--as its supplementary changes to NUREG-0586 suggest-- that onsite and offsite radioactive contamination during decommissioning and afterward will be minimal, why does it seek to remove all liability from the owner even before the process is complete? (If the NRC is wrong, who will pay?)

CL-36/3 It is my understanding that the purpose, and certainly the effect, of the proposed supplement to NUREG-0586 is to reclassify many decommissioning issues as "generic" in order to avoid a community's right of challenge and to allow owners to depart without liability. I understand that the NRC supplement seriously limits a community's ability to challenge even those issues that are considered "site-specific".

The designation of environmental justice issues and endangered species issues must remain viable SITE-SPECIFIC matters for public debate and legal challenge, as must the hazardous technology (I think of the continuing, poisonous twin-towers fallout) of rubblization.

CL-36/4 The NRC must retain regulatory control of the entire site. The NRC must require a LICENSE AMENDMENT when an owner is granted a change from an operating license to a materials-possession-only license.

CL-36/5 The owner must remain fully liable.

CL-36/6 The NRC must address the subject of radiation dangers after decommissioning HONESTLY, USING THE BEST INDEPENDENT RESEARCH, including
--exposure of children
--exposure of the weak, the ill, the elderly
--offsite contamination
--credible, not arbitrary, environmental impact categories
FOR EACH STEP OF A DECOMMISSIONING.

CL-36/7 The NRC must NOT permit "release of property for unrestricted use" or under "restricted conditions" To permit the release of radioactively contaminated materials into daily consumer use and commerce, or to allow unregulated disposal of such materials is abhorrent. Bin Laden might approve of such an interesting experiment; I trust that the NRC does not and will not.

CL-36/8 The NRC must resist the pressure of the nuclear industry If their profits are waning, they have had their turn. The citizens of the U.S., who pay everyone's way, have a right to expect a healthy environment, and a right to fight for it within the U S. legal system. (But what a shame that a fight is ever needed)

Sincerely yours,

Suzanne Miller
3142 Yorkshire Road
Cleveland Hts , Ohio 44118

Template = ADM-013

E-RIDS = ADM-03
Add. = M. Hasdil (MTH2)

11/9/01
66 FR 56721
(37)

From: "James Nordlund" <reality@pld com>
To: <dgeis@nrc gov>
Date: 1/26/02 7:32PM
Subject: Comments on the N R C draft, please add them :)

CL-37/1 Hello! As NIRS, I stand firmly against the "release" of radioactively contaminated materials into daily consumer use and commerce or unregulated disposal.

I hope you'll give these matters the serious attention they warrant. Viva la evolution, viva green party! reality Thanx for your attention, time, and efforts!

Matutinally Yours,

Name = james m nordlund

Preferred E-Mail Address = reality@pld com

Additional E-Mail Address = jamesmnordlund@yahoo.com

Web Site URL = www everythingforeveryone org

Home Address = p o.b. 982, lakin, KS 67860-0982

Work Address = s a a.

Send Correspondence = Home

Home Telephone = [redacted]

Work Telephone = 209-844-3835

Fax = 209-844-3835

Work Sector = nonprofit, human services

Professional Field = psychology

Professional Field (others) = evolution

Specialization = mental health counseling

RECEIVED
2002 JAN 28 AM 11:55
REGULATORY PUBLICATIONS

Template=ADM-013 E-RIDS=ADM-03
Add=M. Masnik (MTM2)
Home phone number removed per Mike Lesar.

From: Roger Voelker <regor@scblackmedia.com>
To: <dgeis@nrc.gov>
Date: 1/27/02 8:01PM

11/9/01
66 FR 56721
(38)

Chief, Rules and Directives Branch
Division of Administrative Services
US Nuclear Regulatory Commission
Washington, DC 20555-0001

To Whom it May Concern:

The following constitutes my comments on NUREG¡V0586 Draft Supplement 1 Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities--Draft Supplement Dealing with Decommissioning of Nuclear Power Reactors:

Several years ago I attended a meeting between representatives of several investor-owned electric utility companies that were attempting to work out a common position on utility deregulation for the state of Indiana.

At one point in the discussion a representative of American Electric Power, owner of the D.C Cook Nuclear Plant, made a most revealing statement. Concerned that nuclear power could not compete with other forms of electric generation, the AEP representative pointed out that, following decommissioning, they could not just come in with a wrecking ball, knock the plant down and haul the rubble off to the nearest landfill. Instead, he said, the closed plant would have to be indefinitely isolated from the environment. His exact words (delivered with great emphasis) were ¡§that means fences, guards and guard dogs FOREVER!¡□

CL-38/1 Now, with Supplement I to NUREG¡V0586, the NRC would appear to be paving the way for the very rubblization and possible release into the environment of ¡§slightly contaminated¡□ material that the AEP rep said could not happen.

The vehicle to allow this would appear to be the declaration of more decommissioning issues ¡§Generic¡□ rather than ¡§Site-Specific,¡□ thus preempting the right of local residents to raise concerns during the License Termination Plan review.

CL-38/2 Some of my concerns about NUREG¡V0586 include.

„h the use of generic proceedings to eliminate site-specific evaluation of concerns;

CL-38/3 „h the generic approval of rubblization of reactor buildings and leaving them on site,

CL-38/4 „h the vague and arbitrary use of ¡§Small, Moderate, and Large¡□ significance levels and the intent for use of these designations, which echoes previous attempted bogus designations such as ¡§below regulatory concern¡□;

CL-38/5 „h the extent to which radioactive contamination levels that are permitted to be ¡§released¡□ from regulatory control for decommissioning would result in the release of radioactive materials routinely;

CL-38/6 The draft GEIS says that ¡§low-level¡□ radioactive waste disposal is not part of the scope of this GEIS. However, this would appear to be contradicted by the definition of decommissioning (pg. xii), and by the scope, the release and removal of Sites, Systems and Components (SSCs).

CL-38/7 I specifically oppose any release of contaminated materials during decommissioning or other times/ procedures.

Template - ADM-013

E-RIDS = ADM-03
cc = M. Masnik (HTH2)

Roger Voelker
5849 E North St.,
Tucson, AZ 85712

11/9/01
66FR56721
(39)

From: "Anne and Tom Moore" <c3moore@hotmail.com>
To: <dgeis@nrc.gov>
Date: 1/28/02 7:41AM
Subject: NUREG-0586

Chief, Rules and Directives Branch,

CL-39/1 I find the proposals in Supplement 1 to the Generic Environmental Impact Statement on Decommissioning unrealistic when it comes to the health of U.S. citizens at the time of decommissioning and to those living years later.

CL-39/2 To catergorize as "generic" "the release" from regulatory control
CL-39/3 portions of sites before they are completely decommissioned is not responsible. No radioactivity cotaminated parts should be allowed into consumer use, commerce, or unregulated disposal

CL-39/4 To allow utilities to have no liability after decommissioning is done when the proposals are seen as "generic" does not provide any protection to local citizens. Accountibility for our actions is important and utility companies should not be exempt from that.

CL-39/5 There should be a requirement for a license amendment when a utility changes from being a nuclear power operating license to a nuclear materials possession-only license.

CL-39/6 I know that I am not alone in asking you to protect our citizens from radioactivity on such a large scale and hope that you will live up to your responsibility by not lessening the requiremets that utility companies face when decommissioning takes place.

Sincerely,

Anne H. T. Moore

Template-ADM-013 E-RIDS=ADM-03
Add=M. Mossik (MTM2)

11/9/01
66 FR 56721
(40)

From: "john runkle" <jrunkle@mindspring.com>
To: <dgeis@nrc.gov>
Date: 1/28/02 1:11PM
Subject: Decommissioning Nuclear Power Reactors EIS Supplement 1

VIA EMAIL & Mail

1/29/02

From: Conservation Council of North Carolina, Post Office Box 12671, Raleigh, North Carolina 27605; telephone: 919-839-0006

To: Chief, Rules Directives Branch; Division of Administrative Services,Mailstop T 6 D 59; U.S. Nuclear Regulatory Commission; Washington D.C. 20555-0001

Re: Draft Decommissioning Nuclear Power Reactors EIS Supplement 1 (Supplement to NUREG-0586)

Dear Sir:

The Conservation Council of North Carolina is a statewide environmental organization with a long history of involvement in nuclear plant licensing, waste storage and decommissioning. We offer the following comments on the NRC's Draft Decommissioning Nuclear Power Reactors EIS Supplement 1:

CL-40/1 1. We are deeply concerned about the NRC's proposal to treat almost all decommissioning issues in a generic EIS rather than in an individual EIS for each plant. As we have seen in many of the licensing proceedings, nuclear plants have a wide variety of dissimilarities, even with other plants owned by the same utility and constructed by the same companies. These differences are compounded when it comes to decommissioning as the different work plans for each plant may have considerably different impacts on workers on-site and the public off-site.

CL-40/2 2. All decommissioning activities need to consider the impacts of radiation exposure to workers and the public. Radiation exposures to children and other vulnerable members of the population should be separately and realistically addressed with all pathways to exposure closely examined. Assumptions about off-site exposure should be substantiated with full peer-review from neutral parties, i.e. not employees of the nuclear utilities. The risk to public health cannot be minimized or discounted.

CL-40/3 3. Decommissioning should never be deemed to be complete until the entire site is no longer radioactive. We understand that this means extremely long-term oversight of the reactor sites. Some of the decommissioning wastes, such as the nickel compounds, have extremely long half-lives and remain dangerous for millennia. Liability for the site needs to remain with the utilities and the NRC must retain regulatory control over the entire site.

CL-40/4 4. As we have previously commented in other dockets, there should be no release of radioactively contaminated material of any kind into consumer use or into general commerce. Disposal of all materials from decommissioning need to be regulated, regardless of whether they are radioactive or not.

Please notify me of any decision you make regarding this docket.

Sincerely,

John D. Runkle

General Counsel

Template = ADM-013

E-RIDS = ADM-03
Add = M. Hasnik (MTH2)

11/9/01
66 FR 56721
(41)

From: Benjamin Schlau <benitothecat@yahoo com>
To: <dgeis@nrc gov>
Date: 1/29/02 2 56PM
Subject: subtle deregulation

Chief, Rules and Directives Branch/ Division of Administrative
Services/ Mailstop T 6 D 59
US Nuclear Regulatory Commission
Washington, DC 20555-0001

CL-41/1 It has come to my attention that the Nuclear Regulatory Commission is possibly compramising the securty of our nations future by making way for further build up of nuclear waste that will theoreticly be safe in so many thousands of years

CL-41/2 I am opposed to any extensions on operating licenses for nuclear facilities of any sort and wish for a move to cleaner renewable energy.

Thank you.
U S. Voter
Benjamin Schlau
1163 Lazy Ln. Ct.
Mt. Pleasant, SC
29464

The Nuclear Regulatory Commission has already relaxed and is further
relaxing its decommissioning requirements for nuclear power reactors.
NRC is justifying these regulatory changes by "supplementing" the 1988
Generic Environmental Impact Statement on Decommissioning Nuclear
Facilities (NUREG-0586) with new, "updated" informaton on nuclear
power
reactor decommissioning If NRC succeeds, many key issues that local
communities face as reactors close and owners leave (liability-free)
will be unchallengeable, because they are being listed as "generic"
issues. "Generic" decommissioning issues are ones that NRC determines
apply to numerous reactors and which are supposedly being resolved with
this Supplement to the Generic Environmental Impact Statement. "Site
specific" issues are ones that can still be raised in local
communities,
but the opportunities to address even site-specific issues is being
curtailed dramatically. NIRS supports the designation

Template = ADM-013

E-RIDS = ADM-03
Add = H. Masnik (NTUR)

of environmental
justice and endangered species issues as site-specific (not generic).
NIRS opposes Rubblization but supports its designation as
site-specific

11/9/01
66 FR 56721
(42)

From: Tom Ferguson <thinkspeak@earthlink.net>
To: <dgeis@nrc.gov>
Date: 1/29/02 4.13PM
Subject: comment (NRC) draft Decommissioning Nuclear Power Reactors EIS

CL-42/1 One of the important and obvious things to be said about decommissioning nuclear power plants is that it is expensive, potentially dangerous and nearly unprecedented. We appreciate that entombment is now being considered.

CL-42/2 It ought to be equally obvious that

1.Since a satisfactory waste isolation solution evades us (we do not agree with Secretary Abraham that Yucca Mountain is a suitable repository based on science – the DOE itself admits that the site is not geologically suitable and the GAO raises serious questions about the selection process).

CL-42/3 2.That a serious accident or terrorist act in this industry could be catastrophic, leaving immense fatalities, injuries, future cancer victims and vast areas uninhabitable for years

CL-42/4 3 That without public subsidy (via Price-Anderson) nuclear power is economically untenable

CL-42/5 4.Given these factors the complete phase-out of nuclear power should be a high priority Alternative power sources such as wind, solar, hydrogen fuel cell [and conservation] should be vigorously pursued in its stead

Tom Ferguson
Cyndia Hunnicutt
Kallio Hunnicutt-Ferguson
372 Oakland ave se
Atlanta, GA 30312

Template = ADM-013

E-RIDS = ADM-03
Add = M. Hasdik (MTH2)

11/9/01
66 FR 56721
(49)

From: "Mary S Reed" <maryreed@localnet com>
To: <dgeis@nrc gov>
Date: 1/29/02 5 44PM
Subject: NUREF-0586 Comments

Chief, Rules and Directives Branch/ Division of Administrative
Services/ Mailstop T 6 D 59
US Nuclear Regulatory Commission
Washington, DC 20555-0001

CL-43/1 I am opposed to the following changes to NUREF-0586

In Supplement 1 to the Generic Environmental Impact Statement on Decommissioning:

NRC allows "rubblization" (crumbling the concrete reactor building) of nuclear reactors, without opportunity for public intervention until the action is completed

CL-43/2 NRC allows portions of sites to be "released" from regulatory control before the whole site it released

CL-43/3 NRC opens up two "entombment" options

CL-43/4 NRC ignores radiation dangers after decommissioning is done and utility is relieved of liability.

CL-43/5 NRC ignores radiation exposures to children and other vulnerable members of the population and creates a fictitious highest exposed "critical group" based on unsubstantiated assumptions.

CL-43/6 NRC ignores radiation offsite and permits utilities to ignore it in decommissioning planning NIRS calls on the NRC to incorporate offsite contamination into all evaluations of environmental impacts.

CL-43/7 NRC prevents the National Environmental Policy Act from applying to most of the decommissioning process (The claim appears to be that this proposed Supplement 1 satisfies the Environmental Policy Act for most of the decommissioning issues)

CL-43/8 NRC makes most aspects of decommissioning "generic" rather than site-specific, so they cannot be legally reviewed or challenged at individual sites.

CL-43/9 NRC redefines terms to avoid local, site specific opportunity to question, challenge and prevent unsafe decommissioning decisions

CL-43/10 NRC sets arbitrary and unsubstantiated (low, medium and high) environmental impact categories for each of the steps in decommissioning, to give the appearance that they have minimal effects, to justify not fully addressing them now and to prevent their inclusion in site specific analysis.

CL-43/11 NRC is removing the requirement for a license amendment when changing from a nuclear power operating license to a nuclear materials possession-only license. (With no license amendment, there is no

Template = ADM-013

E-RIDS-ADM-03
Add = M. Malsnik (MTM2)

opportunity for public challenge or adjudicatory processes)

CL-43/12 NRC is attempting, with this supplement, to legally justify the removal of the existing opportunities for community involvement and for legal public intervention until after the bulk of the decommissioning has been completed. This includes such activities as flushing, cutting, hauling and possibly rubblizing of the reactor.

CL-43/13 NRC states that the portion of the decommissioning regulations (10 CFR 20 section E and its Environmental Impact Statement, NUREG 1496) that set the 25, 100 and 500 millirems per year allowable public dose levels from closed, decommissioned nuclear power sites, are not part of the scope of this Supplement

CL-43/14 NRC defines decommissioning, in part, to include the "release of property for unrestricted use.." and the "release of property under restricted conditions."

CL-43/15 If the changes pass, many key issues that local communities face as reactors close and owners leave (liability-free) will be unchallengeable, because they are being listed as "generic" issues. "Generic" decommissioning issues are ones that NRC determines apply to numerous reactors and which are supposedly being resolved with this Supplement to the Generic Environmental Impact Statement. "Site specific" issues are ones that can still be raised in local communities, but the opportunities to address even site-specific issues is being curtailed dramatically I support the designation of environmental justice and endangered species issues as site-specific (not generic) I oppose Rubblization but supports its designation as site-specific.

CL-43/16 Please consider my opposition to many of the proposed Supplements. The public should not be further shut out of the decommissioning process. Nuclear waste is deadly and it's handling should not be downgraded in any way.

Sincerely,
Mary S. Reed
29 Sunnyside Road
Scotia, NY 12302

CC: "Senator Charles Schumer" <senator@schumer senate gov>, "Senator Hillary Clinton" <senator@clinton senate gov>, "Rep Mike McNulty" <mike mcnulty@mail house gov>

11/9/01
66FR56721
(44)

From: <Pdbsongs1@cs.com>
To: <dgeis@nrc.gov>
Date: 1/29/02 7.04PM
Subject: Comments-NRC Rules on Decommissioning - EIS Supplement I

D. Geis - NRC

I am forwarding Attachment (word document) letter to NRC, with my personal comments on proposed NRC Rules on Decommissioning.

Please confirm their receipt and acceptance by email.
Thank you in advance
Patricia Borchmann

Template=ADM-013

E-RIDS=ADM-03
Cdl-M.Masnik (MTM2)

FROM : BE GOOD FAX NO. : 7609419625 Jan. 30 2002 11:16AM P1

Patricia Borchmann
176 Walker Way
Vista, Ca 92083
(760) 941-9625

January 30, 2002

Chief, Rules and Directives Branch
Division of Administrative Services / Mailstop T 6D 59
U.S. Nuclear Regulatory Commission
Washington DC 20555-0001

Email to: dgeis@nrc.gov

RE: U.S. Nuclear Regulatory Commission's Draft Decommissioning Nuclear Power Reactors E.I.S. Supplement 1

CL-44/1 I am very **strongly opposed** to the regulatory changes sought by NRC to further relax decommissioning requirements for nuclear power reactors, as proposed by the 1998 "Generic" E.I.S. on Decommissioning Nuclear Facilities (NUREG-0586), with new "updated" information on nuclear power reactor decommissioning. **The Proposed regulatory changes sought by N.R.C. are an insult to the public interest.**

CL-44/2 I also strongly opposed, and object to the proposed supplement to the "Generic" E.I S., and the deliberate and inappropriate exclusion of "site specific" issues, which should be an imperative part of any analysis, for any form of an E.I.S. Supplement.

CL-44/3 "Site specific" issues are of vital importance, especially at San Onofre Nuclear Generating Station (SONGS) where Unit 1 is currently being decommissioned. It is imperative that N.R.C. evaluate and analyze SONGS Decommissioning on a "site specific" basis instead of a "Generic" basis, due to the very unique physical site characteristics at SONGS, which other existing nuclear plants in U.S. do not possess.

The distinctions, and physical characteristics which make conditions at SONGS so different and unique are vitally important, and are of utmost importance in any analysis of Decommissioning at SONGS, in order to ensure the level of public health and safety will be assured, and provided without compromise to citizens in communities surrounding SONGS. As SONGS Unit 1 is currently being Decommissioned, the site specific analysis must include both the short term and long term effects, and must also analyze effects of offsite contamination, effects of cumulative contamination and exposure, and must provide realistic mitigation measures..

A Summary of the "site specific" physical characteristics and conditions at SONGS, which should justify "site specific" analysis (as opposed to a Generic E.I S. Supplement) include the following:

- SONGS is located in a highly populated area, with dense populations in both Orange County and San Diego County, where citizens may be exposed to potentially significant offsite effects.
- SONGS is located in a highly active seismic zone, where seismic activity is speculated by some geological experts to generate quakes up to 7 6 Magnitude on the Richter Scale (by new evidence of local off-shore blind thrust faults, which cause a greater extent of groundshaking and acceleration than the manner in which quakes are traditionally studied). SONGS was only designed and constructed to withstand a maximum quake of 7.0 Magnitude.
- SONGS is located in a area immediately on the southern California coastline, with most facilities elevated only to a level of 20' ft. above mean sea level. These facilities are highly exposed and vulnerable to effects of rising sea levels, and tsunamis, and are insufficiently protected.

CL-44/5 **I am opposed to NRC regulations pertaining to Decommissioning which would allow:**

- Rubbilization (crumbling the concrete reactor building) of nuclear reactors, without
- opportunity for public intervention until the action is completed.

CL-44/6
- Allows portions of sites to be "released" from regulatory control before the whole site is released.

CL-44/7
- Allows offsite radiation to be ignored, and permits utilities to ignore it in decommissioning planning. It is imperative to include offsite contamination into all aspects of decommissioning planning and evaluation of environmental impacts.

CL-44/8
- Allows NRC to make most aspects of decommissioning "generic" rather than site specific so NRC cannot be legally reviewed or challenged at individual sites.

CL-44/9
- Allows NRC to redefine terms to avoid local, site specific opportunity by public to question, challenge and prevent unsafe decommissioning decisions.

CL-44/10
- Allows NRC to set arbitrary and unsubstantiated (low, medium and high) environmental impact categories for each of the steps in decommissioning, to give the appearance that they have minimal effects, to justify not fully addressing them now, and to prevent their inclusion in site-specific analysis. This use of this piecemealing approach is unacceptable.

CL-44/11
- Would allow (with this supplement), NRC to legally justify removal of existing opportunities for community involvement and for legal public intervention until after the bulk of the decommissioning has been completed, including activities as flushing, cutting, hauling and possible rubbilization of reactor.

CL-44/12
- NRC asserts that the portion of decommissioning regulations (10 CFR 20 section E and its EIS, NUREG 1496) set the 25, 100 and 500 millirems per year allowable public dose levels from closed, decommissioned nuclear plants sites, and are not part of the scope of this Supplement. I disagree, and consider the inclusion of exposure from closed decommissioned plants a necessity to develop an accurate and realistic analysis of cumulative impacts.

CL-44/13
- Allows NRC to define decommissioning in part, to include "the release of property for unrestricted use" .. and the "release of property under restricted conditions." It is entirely inappropriate and scientifically ludicrous to allow "release" of highly radioactively contaminated materials into daily consumer use and commerce, or unregulated disposal, or the recycling of such materials into any form which causes public exposure with radioactively contaminated materials.

CL-44/14 In conclusion, it is with utmost disappointment to again observe with each and every new NRC Rulemaking, important components of the public's existing "right to know" and the public's right of active involvement in plant processes, decisions and their methodology, on all aspects of decommissioning activities routinely appears to be further diminished. As proposed, the EIS (Supplement I) would eliminate all opportunities for public intervention, and public oversight and/or intervention entirely with use of a "generic" EIS In such cases, the loss of public oversight and intervention on projects with a scope as large as decommissioning at SONGS, such losses may be unparalleled, or fully understood without a site specific issue analysis. **The citizens in local communities surrounding nuclear plants such as SONGS deserve this entitlement, and demand this entitlement.**

CL-44/15 The public has not only the "right to know", but NRC and the industry has the duty to fully disclose all related impacts, short and long term, on and offsite, direct and indirect, as well as cumulative effects resulting from decommissioning to citizens and members of the public living in local communities surrounding the nuclear plants.

CL-44/16 We are tired of being unknowingly treated as an entity from whom the industry can escape the obligation of full disclosure, and "used" as the entity upon whom the industry dumps the real long term costs, and as the entity who absorbs the costs.

Patricia Borchmann

CLEAN WATER ACTION ALLIANCE

11/09/01
66FR56721
(45)

January 30, 2002

Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T 6 D 59
United States Nuclear Regulatory Commission
Washington, DC 20555-0001

To Whom It May Concern:

Pursuant to the Federal Register Notice of November 9, 2001 on the availability of the draft supplement to the Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities (NUREG-0586), Clean Water Action Alliance (CWAA) provides the following comments under the extended comment period ending January 30, 2002. CWAA is a citizen-based environmental organization with over 55,000 members throughout Minnesota. As a member of the Sustainable Energy for Economic Development (SEED) coalition and the Minnesotans for an Energy-Efficient Economy (ME3) Coalition, CWAA has worked for the transition away from coal and nuclear generation towards cleaner, non-polluting sources of energy for nearly ten years.

CL-45/1 CWAA supports the comments of NIRS, Public Citizen and the Critical Mass Energy Project. We concur with these organizations that changes in the supplement designed to limit citizen's opportunities to review or challenge decommissioning projects are undemocratic and ill advised. It is imprudent to reduce public oversight of these projects, no matter how much more convenient it seems. Environmental and health risks from improper decommissioning are very high, particularly to neighboring communities. Labeling certain issues 'generic' and making them unchallengeable is a disservice to those communities and citizens around the country who may be exposed to radioactive waste during the transport and disposal process.

CL-45/2
CL-45/3

Thanks you for your consideration.

Sincerely,

Diana S. McKeown

Diana S. McKeown
Energy Program Coordinator

template = ADM-013

E-RIDS = ADM-03
Add = H Mosnik (HTM2)

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CLEAN WATER ACTION

FAX COVER

To: Chief, Rules & Directives Branch Pages 2

From: _____ Date 30 Jan 2002

(612) 623-3354

Notes

attn: Rules

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PHYSICIANS FOR SOCIAL RESPONSIBILITY / ATLANTA
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11/09/01

66FR56721
46

NRC
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MAIL: Chief, Rules and Directives Branch/ Division of Administrative Services/ Mailstop T 6 D 59
US Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Ladies and Gentlemen:

CL-46/1
CL-46/2 In keeping with appropriate medical and public policy principles, we urge total transparency. We urge that the Commission always lead it's interactions with the public at large by being fully open and informative about the potential dangers, the expense and the limited experience we as a nation have with the decommissioning of nuclear reactors United States citizens deserve nothing less than total transparency.

We believe that the following statements are true and belong in the public dialogue, as the issues associated with decommissioning are presented to citizens'

CL-46/3 1. **A satisfactory waste isolation site evades us.** Yucca Mountain is not a suitable geologic repository based on science – the DOE itself admits that the site is not geologically suitable; storage canisters will be required to protect the waste from exterior environmental contamination. Additionally, the GAO raises serious questions about the selection process.

CL-46/4 2. **A serious accident or terrorist act could be catastrophic.** Such an occurrence could result in large numbers of human fatalities, injuries and illnesses and vast areas of land uninhabitable for years.

CL-46/5 3 **The enterprise of electricity generation using nuclear fission requires public subsidy.** Without Price-Anderson protection, nuclear power would be economically untenable.

CL-46/6 4. **Consideration of these factors must be fully and publicly discussed before exposing our citizens to additional exposures through development of new nuclear generation facilities.** The complete phase-out of nuclear power should be considered based on objective analysis of health and economic effects including probability evaluation of all possible accidents and incidents, and comparison of all potential energy sources such as wind, solar, hydrogen fuel cell and including conservation.

Tom Ferguson, Physicians for Social Responsibility/Atlanta
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Template = ADM-013 E-RIDS = ADM-03
Add = H. Hasmik (HTH2)

11/09/01
66 FR 56721
(47)

From: "Dave Ritter" <dritter@citizen.org>
To: <dgeis@nrc.gov>
Date: 1/30/02 4.22PM
Subject: Decommissioning comments

see below....

January 30, 2002

Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T 6 D 59
US Nuclear Regulatory Commission
Washington, DC 20555-0001

To Whom It May Concern:

Please accept the following comments in regard to Draft Supplement 1 to NUREG-0586, "Draft Supplement Dealing With Decommissioning of Nuclear Power Reactors," and place them into the public record.

CL-47/1 Public Citizen is very concerned about several aspects of this supplement to NUREG-0586, specifically those that could pose risks to public health, the public's right to participate in decisions that affect them, and environmental quality. Additionally, Public Citizen is concerned that the provisions outlined in the Supplement might allow owners and operators of nuclear power reactors to reduce or completely evade their civic, environmental, economic and legal responsibilities.

CL-47/2

CL-47/3 Having stated that, we would like to make it abundantly clear that we see decommissioning to be the most appropriate and responsible action to take with all nuclear reactors. Nonetheless, any and all decommissioning activities should be performed methodically and with great caution, ensuring that the public is appropriately involved in the processes and thoroughly protected from dangers every step of the way. Certainly, every reactor shut-down is another step away from further creation of radioactive waste, the ever-present possibility of nuclear terror (be it a reactor accident or terrorist attack) and the continuing irradiation of our everyday lives. Every shut-down reactor can take us a step closer to a sustainable energy future but, unfortunately, reactor shut-down is not the threshold of safety, where the public can be assured that no health or environmental dangers will originate from the site. There still remains a mountain of radioactive waste after shut-down, including the reactor itself and, typically, an incredibly dangerous stockpile of irradiated reactor fuel. Whereas the reactor itself and the equipment and materials of the central facilities are often treated as the object of decontamination, it must be noted that the previous operation of the plant has dispersed radiation and contamination that did not regard the facility's fenceline as a barrier. Any serious approach to decommissioning a site must take this into account.

CL-47/4

CL-47/5

CL-47/6

CL-47/7

Template = ADM-013

E-RIDS = ADM-03
Cole = M. Mossik (MTM 2)

CL-47/8 Decommissioning should not be a final opportunity for the nuclear industry to "take the money and run" - be it to make a profit from inadequate cleanup and monitoring, or to limit losses from costs that had been underestimated for decommissioning throughout the operating lifetime of the nuclear reactor. There should be no allowance for the industry to

CL-47/9

hurriedly raze structures, sweep the radioactive mess under a porous and permeable carpet (or disperse the remains and cleanup materials in many unregulated forms far from the reactor site), cut corners and add risks and contamination to an already precarious clean-up operation. The public must be protected.

Our specific concerns are as follows:

Relegation of More Decommissioning Processes to Generic Status

CL-47/10 In establishing 80% (24 of 30) of the environmental impacts of decommissioning as being "generic" the NRC is doing the industry's bidding to restrict or eliminate the affected public's opportunities to comment on, guide, monitor and review the decommissioning of

CL-47/11 nuclear power reactors in their communities. Regardless of any uniformity that may or may not exist as issues to consider at decommissioning reactors - and our position is that any concerns of the relevant communities are site-specific - the NRC's move to make most considerations within the decommissioning process "generic" is a thinly veiled

CL-47/12 project to eliminate public review and full disclosure through public hearings. Further, this move runs counter to NRC's "Openness" Principle of Good Regulation, wherein "Nuclear regulation is the public's business, and it must be transacted publicly and candidly. The public must be informed about and have the opportunity to participate in the regulatory processes..." and to NRC's Organizational Value of "Service to the public, and others who are affected by our work." (both found at http://www.nrc.gov/who-we-are/values.html)

Arbitrary and Capricious Determination of "Levels of Significance" for Decommissioning Environmental Impacts

CL-47/13 NRC's "Levels of Significance and Accountability of Environmental Impacts" assign values of risk to affected communities as "small," "moderate" and "large" as determinants for the denial or approval of a public site-specific review and, potentially, a public adjudication for environmental mitigation. Public Citizen maintains that these categories are excessively arbitrary and broad, and largely groundless for the following reasons:

1. The biological effects of ionizing radiation are destructive. No safe "threshold level" for exposure to ionizing radiation exists for the general population (including the fetus).

2. There is a long history of unresolved regulatory conflict over radiation protection standards that are utilized to determine NRC risk assessments. Federal regulators, including the NRC and the Environmental Protection Agency, have not reached a consensus on residual radiation criteria for decommissioning, with EPA standards being significantly lower (more protective) than NRC criteria. To our knowledge, this conflict has not been resolved and, therefore, it appears that the NRC has unilaterally and arbitrarily concluded what standards would apply in determining whether a risk is "small," "moderate" or "large."

3. The NRC risk assessment inappropriately ignores the population of children in its "critical group" evaluation as the population most vulnerable to residual radioactivity exposure from decommissioning operations. This runs counter to NRC's Organizational Value to a "Commitment ... to protecting the public health and safety."

4. The NRC has a documented history of significant lapses in effective oversight of decommissioning operations as reported by the General Accounting Office in a May 1989 report, "NRC's Decommissioning Procedures and Criteria Need to be Strengthened" (GAO/RCED-89-119). The GAO not only found that complete information does not exist for all licensed activities or buried wastes, but that NRC was found to have terminated a license with radioactive contamination in excess of its own guidelines. Further, the report noted that NRC regulations lacked a time requirement for document retention. NRC's questionable past performance does not support the agency's move toward generic treatment of decommissioning nuclear facilities where affected communities are denied public review and full disclosure of contamination, the decommissioning plan and license termination plan.

Rubblization

CL-47/14 NRC's proposal to allow "rubblization" (defined as: "the demolition of onsite concrete structures. Rubblizing these structures could result in material ranging from gravels to large concrete blocks, or a mixture of both.") of concrete structures at the reactor site to take place without opportunity for public intervention until after the action is completed

CL-47/15 is outrageous. Rubblization poses some specific risks to the surrounding communities and the site workers, as the rubblized material could contaminate via air, soil, and water pathways. Thus, Public Citizen insists that it is only appropriate that the affected communities surrounding the reactor site be given opportunities to review rubblizing plans and procedures, and that this issue be addressed on a site-specific basis.

Partial Site Release before License Termination

CL-47/16 The Supplement indicates that portions of a nuclear reactor site could be released from regulatory control prior to the site operator's license termination. This would relieve the nuclear utility of responsibility and liability for portions of sites (be they materials or real property) while still being licensed for the control of the entire site. Public Citizen is completely opposed to any such practice, which would allow radiation/radioactively-contaminated materials and wastes to be released, reused, or recycled, without restriction, into the unregulated industrial, commercial, and public environment.

Externalizing Costs to Ratepayers/Taxpayers

CL-47/17 Public Citizen is opposed to any policy that would shift the financial burden of decommissioning to ratepayers. The cost of properly decommissioning (including thorough decontamination) a reactor site can vary widely, depending on the size of the facility, the amount of time in which it was operational, and the degree of contamination.

As the NRC itself stated in the Supplement, the lack of adequate decommissioning funds can potentially result in delays and/or unsafe and improper decommissioning. Further, with utility deregulation and the attendant shuffling of corporate ownership, much uncertainty has developed regarding the ability of the owning and operating utilities to pay for proper decommissioning of their facilities. Public Citizen insists that site-specific reviews are necessary so that the public has an opportunity to ensure that the utility will be able to pay for the entire, thorough decommissioning process.

Relevance of "Out-of-Scope" Activities

CL-47/18 There are several issues in the Supplement which are briefly addressed and dismissed as "out-of-scope" which we insist need to be dealt with as site-specific issues for any thorough EIS on decommissioning, with full public rights to hearings, review, oversight, and disclosure maintained. These include:

1. Spent fuel storage and maintenance - The public at each reactor site community should determine how irradiated/"spent" fuel is stored/dispositioned. If a centralized high-level waste repository is opened at some future date to accommodate the irradiated fuel and high-level waste from a community's decommissioned reactor, the communities that exist along the possible transportation paths should also be involved in site-specific environmental impact reviews/assessments. To exclude spent fuel storage, maintenance, transport, and disposal away from the reactor location from the scope of this GEIS/Supplement, and the opportunity for site-specific EIS reviews, is arbitrary and capricious.

2. Low-level waste disposal at a a LLW site - The concept of rubblizing and capping a reactor site and allowing it to function as a low-level waste disposal facility without having the appropriate permitting and licensing hearing process is a serious departure from past NRC licensing practices, and any such "rubblizing" proposal should not be approved without a site-specific EIS review. To exclude this or any similar proposal from a site-specific EIS review, and the scope of this GEIS/Supplement, is arbitrary and capricious.

Please enter these comments into the public record.

Sincerely,

David Ritter
Policy Analyst
Public Citizen/Critical Mass Energy and Environment Program

From: dianed@igc org
To: <dgeis@nrc gov>
Date: 1/30/02 4.55PM
Subject: NIRS, WMEAC, DWM, CFNFGL Comments on DGEIS Supp 1

TO. NRC
FROM· NIRS, WMEAC, DWM, CFNFGL
RE: Comments on NRC Draft GEIS Supplement
Decommissioning of Nuclear Facilities
NUREG 0586 draft supp 1

11/9/01
66 FR 56721
(48)

Template = ADM-013

E-RIDS=ADM-03
Cole - U. Mossik (MTM2)

January 30, 2002

Chief, Rules and Directives Branch
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United States Nuclear Regulatory Commission
Washington, DC 20555-0001

Nuclear Information and Resource Service (NIRS)
Coalition for a Nuclear Free Great Lakes (CNFGL)
Don't Waste Michigan (DWM)
West Michigan Environmental Action Council (WMEAC)

Comments on Decommissioning GEIS Supplement 1

To Whom It May Concern:

Pursuant to the Federal Register Notice of November 9, 2001 on the availability of the draft supplement to the Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities (NUREG-0586) for public comment, Nuclear Information and Resource Service, Coalition for a Nuclear Free Great Lakes and Don't Waste Michigan provide the following comments.

CL-48/1 NIRS reiterates and incorporates our previous comments and fundamental disputes with regard to the decommissioning GEIS as submitted in formal comments to NRC on July 11, 13 and 14, 2000. Our organizations request that NRC include with this submission all of our organizations' previous comments on this and related rulemakings (including but not limited to the environmental procedures on BRC and those

CL-48/2 that led to the development of 10 CFR 20 section E, the License Termination Rule). Our organizations continue to assert that NRC is deferring its regulatory responsibility of radiological decommissioning to facilitate a cost driven utility self assessment through an expedited decommissioning licensing process and by restricting a duly promulgated public hearing process for affected communities as embodied under the

CL-48/3 1988 law. We contend that decommissioning practices on nuclear facilities and its environmental impacts as major federal actions must be conducted under public review with full disclosure and documentation of the amount of radioactivity, the location of residual contamination and the types of radioactive contamination that remain on-site and off-site and are subject to site specific public hearings.

CL-48/4 The NRC claims the agency and the industry have accumulated substantial decommissioning experience and that this is justification for hastening the generic treatment of Environmental Impact Statements. In effect, this eliminates meaningful public involvement in site-specific reviews and prevents

CL-48/5 the necessary full disclosure of nuclear facility contamination and decommissioning practices. The fact is that decommissioning has a long and significantly checkered regulatory history. The draft supplement to NUREG-0586 does not address or acknowledge these repeated oversight failures including numerous decommissioning experiences where licensees did not adequately decontaminate their facilities These failures include but are not limited to:
the NRC does not know the types, amount and location of buried radioactive waste at some of its decommissioned facilities;
-many licensee decommissioning records are nonexistent or incomplete;
-ground water contamination is higher than federal drinking water standards allow and
-the long standing failure of the responsible federal regulatory agencies to prevent and prohibit radiation contamination that can remain after the NRC terminates a nuclear facility license. (The Environmental Protection Agency is on record requiring more protective cleanup levels than NRC, evidence that NRC's requirements are inadequate.)

CL-48/6 These events do not warrant nor should they instill public confidence in staff conclusions that the agency and the industry can reasonably make the leap to the generic treatment of environmental impact statements for decommissioning nuclear facilities and effectively take away a community's review and the

full disclosure of the extent and location of radioactive contamination both on and off site.

CL-48/7 Our organizations are fully supportive of the permanent closure of nuclear power reactors. Our decommissioning comments are not intended to deter or delay the soonest possible shut down of nuclear

CL-48/8 reactors. Our goal is to require that nuclear facility owners and operators, to the best of their ability, function as the good neighbors and responsible corporate citizens they claim to be. That would include fully encapsulating and isolating all of the wastes and radioactively and chemically contaminated materials resulting from their operations and decommissioning. It includes doing everything possible to:

1) Prevent public exposures in the current and future generations to radiation and chemicals from nuclear power production, waste management, transportation, "clean up" and decommissioning,
2) Prevent additional environmental contamination both on-site and off-site and to remediate and minimize that which has already occurred;

CL-48/9 3) Paying the full costs for long-term monitoring and isolation of radioactive wastes Decommissioning should not end up as a new set of public subsidies for nuclear power by allowing the long term costs (economic, health, resource, etc.) to be denied, ignored or defined away by NRC with no recourse for the local community or state and federal taxpayers that will end up with the costs by default.

CL-48/10 Inherent in the decision to operate the reactors is an acceptance on the part of the generator and the regulator of the production of long-lasting radioactive waste and radioactive and chemical contamination of large volumes of resources. Decommissioning should include responsibly managing that material, not denying its existence.

The Commission's Definition of Decommissioning is Fundamentally Flawed and Limited in Scope

CL-48/11 Our organizations have a fundamental dispute with the Commission's definition of decommissioning. The NRC currently defines decommissioning as "to remove a facility or site safely from service and reduce residual radioactivity to a level that permits (1) Release of the property for unrestricted use and termination of the license; or (2) Release of the property under restricted conditions and termination of the license."

Decommissioning should not permit the release of radioactive contamination from regulatory control and the control of some identified responsible party. At public meetings (in 1993 and in 2001) across the country on the issue of "clean-up," the public consistently called for continued regulatory control over any and all wastes, materials, properties and sites with contamination from nuclear power and weapons fuel chain activities. Rather than requiring the identification, capture and isolation of the remains of nuclear power operations, NRC is legalizing the release of contaminated sites, properties, materials and natural resources. By segmenting the portions of the decommissioning process into separate Environmental Impact Statements and supplements, the public is prevented from addressing the amount and method of identifying residual contamination of the environment, natural resources, the community and downstream and downwind ecosystems. The public is prevented from addressing and preventing the concept of allowable doses to the public from nuclear power operation, wastes and decommissioning activities. We protest the designation of issues related to allowable contamination levels and doses being deemed "out of the scope" of this document.

NRC ignores "offsite" radiation exposure.

CL-48/12 This agency's definition of "decommissioning" is fundamentally flawed in limiting its scope of "property" to the site boundaries. The NRC scope needs to be broadened to encompass the decontamination or mitigation of "property" in addition to structures, systems and components of the nuclear power station that exist beyond the fence line that have been contaminated none the less as a direct result of station operation.

1) Radiological effluent pathways from nuclear facilities (water and air) must be included in the decommissioning analysis and mitigation plan.

CL-48/13 Nuclear facility operation results in significant offsite radiological contamination that is ignored under the current definition. For example, one known pathway occurs over the course of reactor operation as the direct result of fuel rod degradation giving way to pin-hole leaks, cracks and loss of rod integrity with radioactive contamination to the reactor coolant system. Primary and secondary coolant piping leakage results in radioactive contamination releases being deposited and accumulated as sediment on river and lakebeds and coastal receiving waters from deteriorated reactor coolant discharge systems. This is of particularly more concern for utilities that operated once-through cooling systems and/or boiling water reactor technology though not exclusively so. Some of our organizations are aware that reactor operators, as in one case of the Big Rock Point nuclear generating station, have argued that offsite radioactive sediment areas should not be disturbed by removal/decontamination efforts and are better left alone than decontaminated. The decommissioning definition does not require the utility to analyze the scope of this offsite contamination, consider its cleanup nor effectively regulate the enforcement of decontamination of residual radioactivity that has migrated from the reactor site and accumulated off site in affected communities resources such as fresh water supplies. These advertent releases of radioactivity as the result of station operation need be covered within the scope and disclosure as environmental impacts within the decommissioning process.

NRC in its evaluation of the environmental impacts acknowledges "Levels of radionuclide emissions from facilities undergoing decommissioning decreased, because the major sources generating emissions in gaseous and liquid effluents are absent in facilities that have been shut down." Consequently, the NRC currently only considers radiological effluent impacts as a result of decommissioning operations while ignoring the potential need for mitigation of cumulative and persistent toxic radioactive materials deposited downstream over the decades of operation of a reactor.

CL-48/14 2) The contamination of soil, land and property beyond the station boundary line must be included in the decommissioning analysis and plan.

Offsite migration of radioactive materials has occurred through both deliberate and inadvertent removal of materials originally contaminated onsite (tools, concrete construction blocks, etc) For example, concrete cinderblocks used to construct a shield wall at the Connecticut Yankee's Haddam Neck nuclear power station were inappropriately distributed to affected communities as construction materials for buildings including a children's daycare facility. We believe the Connecticut Yankee incident is not an isolated case. The scope of the current definition does not provide for the investigation, analysis and mitigation of radioactive materials, equipment and components originating from a nuclear facility that have been deliberately or inadvertently released to affected communities.

CL-48/15 3) The historic undocumented burial of nuclear waste onsite at nuclear power stations must be investigated, surveyed and mitigated by station owners under the decommissioning plan

As the United States General Accounting Office (GAO) May 1989 "NRC's Decommissioning Procedures and Criteria Need to Be Strengthened" (GAO/RCED-89-119) reports in its Executive Summary.

"For almost 25 years, NRC allowed licensees to bury radioactive waste on-site without prior NRC approval. NRC required the licensees to retain records on the amounts and substance buried rather than provide them to NRC. In five of the eight cases GAO reviewed, licensees buried waste onsite, but four licensees either did not keep disposal data or the data are incomplete. In one case, NRC terminated a license and 10 years later learned that radioactive material had been buried on the site. Also, NRC generally does not require licensees to monitor for groundwater or soil contamination from buried waste.
All five licensees have found ground water contaminated with radioactive substances. At four sites, some of the contamination appears to have resulted from the buried waste—
the contamination at one site was 400 times higher than EPA's drinking water standards allow. At another site, the contamination was 730 times higher, but the source was not known."

CL-48/16 4) An inventory of all the radioactivity, radioactive wastes and materials from reactor operation and decommissioning, and independently verified reporting of its disposition (whether onsite or offsite, whether in licensed or unlicensed facilities and specifics of its storage condition) should be a required part of the environmental review and reports. This information must be part of the site-specific Environmental Impact Statement process and fully disclosed at each reactor as site-specific issues, with the opportunity for formal local hearings and legally- binding input. The corporations responsible for the radioactive wastes from nuclear power reactor operations should be required, by NRC, to keep balance sheets of the radioactivity generated by their reactors and the decommissioning process, and track the disposition of that radioactivity whether it is kept onsite, allowed to leak out into the air and water, or shipped to licensed or unlicensed facilities for disposal or processing, and for possible release into household items.

CL-48/17 We oppose any unlicensed disposition of long-lasting radioactivity from the nuclear fuel chain activities As long as radioactive materials remain, someone should retain a license for those materials, and responsibility for them. That burden should not be shifted to the states and local communities without clear acknowledgement of the stewardship responsibility for that material.

CL-48/18 NRC AND INDUSTRY FAILURE TO RELIABLY ESTIMATE THE REAL COST OF DECOMMISSIONING AND REASONABLY ASSURE THE AVAILABILITY OF ADEQUATE DECOMMISSIONING FUNDS DOES NOT JUSTIFY OR SUPPORT GENERIC TREATMENT OF ENVIRONMENTAL IMPACT STATEMENTS

The NRC GEIS does not adequately address the historic inability by the NRC and industry to accurately assess the final and actual costs associated with decommissioning and the associated underestimation of the rate of accrual for funds set-aside by electrical utilities. The final cost for decommissioning remains highly speculative and therefore likely to continue to be significantly underestimated. As NRC has stated in the DGEIS Supplement the unavailability of adequate decommissioning funds potentially can result in delays and /or unsafe and improper decommissioning. Therefore, our organizations contend that site specific reviews are necessary for public review and disclosure of the availability of adequate decommissioning funds assigned to an adopted decommissioning plan

CL-48/19 While the Executive Summary of NUREG-0586 Supplement 1 claims that the NRC and the industry have over 300 years of decommissioning experience with 22 nuclear reactor facilities permanently shut down, the fact remains that the process is still relatively new and NRC has yet to complete a single radiological decommissioning operation to a license termination plan for a typical large U.S. commercial reactor that operated for any significant length of time. As stated by Mr. Michael Masnick with the NRC at the Public Scoping Meeting on Intent to Prepare Draft Supplement To Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities in Boston, Massachusetts, May 17, 2000 with regard to a question on how many license termination plans have been accepted by NRC, he responded, "none
CL-48/20 have resulted in a license termination." It therefore appears that 300 years of decommissioning experience without a single license termination plan approval does not suggest that NRC is prepared to treat the issue of cost to adequately decommission generically.

CL-48/21 The cost of decommissioning nuclear facilities can vary according to the size of the facility and the degree of contamination. As a result of electric utility deregulation where a competitive market has
CL-48/22 replaced regulated rates, traditional methods of amassing decommissioning funds through imbedded utility
CL-48/23 rates have been replaced with by competitive electricity rates. Additionally, ownership of nuclear facilities has changed for more than half of the nuclear power plants in the United States through mergers and transfers. This shuffling of ownership has raised much uncertainty about the availability of adequate funds for the eventual decommissioning of the nuclear facilities.

As reported by GAO December 2001 "NRC's Assurances of Decommissioning Funding During Utility Restructuring Could Be Improved" NRC reviews of financial arrangements exchanged in these

transfers and mergers "were not always rigorous enough to ensure that decommissioning funds would be adequate. Moreover, NRC did not always adequately verify the new owners' financial qualifications to safely own and operate the plants."

CL-48/24 The Yankee Rowe nuclear power station is a clear example of the inability to accurately assess the final cost of decommissioning. Originally decommissioning estimates ran under $100 million dollars while the current expenditures are estimated to be just under $500 million for the small 170 megawatt pressurized water reactor.
The Shoreham nuclear power station can not be relied upon as an accurate gauge for decommissioning costs as it never reached full power operation.

NRC SEEKS TO LIMIT PUBLIC REVIEW AND HEARINGS BY ESTABLISHING ARBITRARY "LEVELS OF SIGNIFICANCE" ON DECOMMISSIONING ENVIRONMENTAL IMPACTS

CL-48/25 **We have a fundamental dispute with the NRC effort to eliminate public review and full disclosure through public hearings on decommissioning practices and mitigating environmental impacts based on arbitrary and capricious categories for determining "generic" and "site specific" proceedings for nuclear power station decommissioning.**

CL-48/26 **NRCs "Levels of Significance and Accountability of Environmental Impacts" assign values of risk to affected communities as "small," "moderate" and "large" as thresholds for denying or conducting a public site-specific review and potentially a public adjudication for environmental mitigation. Our organizations argue that these broad categories established by NRC are largely baseless for the following reasons:**

1. The biological effects of radiation are deleterious. No safe threshold for radiation exposure for the general population (including the developing fetus) has been established.

2. There is a long history of unresolved regulatory conflict over radiation protection standards assumed to determine NRC risk assessments. Both federal and state agencies have sought to provide greater protection than NRC requires. In addition, NRC

3. The NRC risk assessment inappropriately ignores the population of children in its "critical group" evaluation as the population most vulnerable to residual radioactivity exposure from decommissioning operations.

4. There is a documented history of significant lapses in effective NRC oversight of decommissioning operations as reported by The General Accounting Office in May 1989 "NRC's Decommissioning Procedures and Criteria Need to Be Strengthened" (GAO/RCED-89-119). The GAO not only found that complete information does not exist for all licensed activities or buried wastes, but additionally that NRC was found to have terminated a license with contamination in excess of its guidelines and NRC regulations lacked a time requirement for document retention. NRC's checkered history does not provide justification for the agency to move forward with generic treatment of decommissioning nuclear facilities where affected communities are denied public review and full disclosure of contamination, the decommissioning plan and

THE DECOMMISSIONING ALTERNATIVES DO NOT WARRANT GENERIC TREATMENT THE ENVIRONMENTAL IMPACT STATEMENT AND ARE THEREFORE SUBJECT TO SITE SPECIFIC PROCEEDINGS

CL-48/27 **Alternative methods being considered by the NRC include "entombment" and "rubblization." These involve leaving more nuclear waste on-site in an effort to reduce industry's short-term decommissioning costs but are likely to increase long term costs to affected communities once the sites are abandoned after license termination. The proposed alternative methods**

additionally raise significant technical and environmental impact issues and conflicts with the permanent emplacement of so-called "low-level" radioactive waste at nuclear facility sites not originally licensed as regulated nuclear waste management facilities. The proposed alternative methods are tantamount to creating an unlicensed radioactive waste disposal site. These alternative methods must therefore be subject to review by the affected communities with full disclosure and documentation of the amount of radioactivity, the location and condition of all residual contamination and the types of radioactive contamination that remain on-site. On-site and off-site contamination and radioactivity and associated issues involved with extended institutional control must all be subject to site-specific public hearings.

CL-48/28 The NRC effort to approve alternate decommissioning methods constitutes significant uncertainty and an impediment to accurately estimate the real cost of decommissioning nuclear facilities. There is no real assurance that adequate funds will be available to safely and properly decommission the site and provide for remediation of all necessary cleanup. These regulatory and environmental issues do not support generic treatment of environmental impact statements. In fact because of the economic and technical and environmental uncertainties of the Rubblization and Entombment options, they should be subject to much more rigorous review than provided by this Supplement. This Supplement gives only cursory attention and unsubstantiated dismissal of potentially very serious environmental consequences of the Rubblization, Entombment and Partial site release options.

The Entombment alternative

As a decommissioning option, entombment provides for the utility to remove the irradiated fuel from the core for disposition through either on-site dry cask storage or away-from-reactor interim storage Once the fuel is removed, the facility is allowed to radioactively decay for a specified period of time up to 300 years before demolition and site clean up is achieved.

Rubblization as an alternative to licensed radioactive waste disposal sites

Rubblization is described as the partial decontamination and demolition of radioactively contaminated buildings at nuclear power stations. The interior concrete surfaces are only partially decontaminated and the entire structure (concrete, steel re-enforcement bar and other materials) is then razed to grade level into the foundation hole. The burial site is then covered over with soil cap. NRC and industry are also proposing that rubblized contaminated material can be hauled to landfills unlicensed for radioactive waste.

CL-48/29 However, the rubblization process must account for the permeation of porous concrete structures (containment dome, basemat, and walls) with radioactivity much deeper that surface contamination that would be sand blasted during a decontamination process. Activated concrete would be rubblized and would thus constitute so-called "low level" radioactive waste. Long-lasting radioactive elements such as cesium-135 and strontium-90 are present with many other fission products and radioisotopes in the concrete and should not be ignored or defined away. No data are provided in this Supplement to justify Rubblization and on-site or off-site disposition. Thus, local communities have every right to participate legally (in adjudicatory proceedings) and be provided with information- full disclosure of such planning.

CL-48/30 Essentially, the agency and industry are proposing that a so-called "low-level" radioactive waste dump can now be grandfathered on a reactor site without a formal permitting and licensing hearing process. The decommissioning utilities will provide an analysis that can "assure" that no ground water movement will occur through the radioactive burial site providing a potential transport mechanism and potential radioactive exposure to the public and environment. The utilities are to provide a "dose model" to "assure" the affected communities that the radioactive site will pose no health risks to present and future public health and the environment. These "assurances" cannot be bona fide by generic treatment and therefore require the availability of site specific proceedings.

CL-48/31 We concur with the GAO findings as reported in GAO-02-48 "NRC's Assurances of Decommissioning Funding During Utility Restructuring Could be Improved" dated December 2001. GAO reported the following conclusions:

"Rubblization represents a departure from NRC's past licensing practice, which emphasized

shipping low-level radioactive wastes from decommissioning sites to disposal sites. Although NRC has estimated that rubblization could save a licensee from $10 million to $16 million in waste disposal costs during decommissioning, its Advisory Committee on Nuclear Waste has concluded that technical factors, such as the depth of radioactive contamination and the volume of rubblized waste, could significantly diminish the potential cost savings. The Advisory Committee also believes that evaluating radioactive material content and doses from rubblization, both at the site and in local groundwater, may prove difficult and expensive."

CL-48/32 "The NRC staff's decision that entombment might reduce decommissioning costs is questionable."

"According to NRC's staff, 'very expensive remedies' could be required if an entombment configuration proved unable to adequately isolate radioactive contaminants over the 100-year or longer [up to 300-years by NRC projections] time period needed for radioactive decay. Given the length of time involved, states are concerned that they will have to pay remediation costs should an entombment fail."

CL-48/33 "Aside from questionable cost benefits, rubblization and entombment raise a number of technical issues. For instance, NRC does not intend to require that sites where rubblized radioactive materials would be buried have protection equivalent to off-site disposal facilities for low-level radioactive waste. Disposal facilities for commercial low-level radioactive waste, which are licensed and regulated by NRC oar by state (under agreement with NRC), must be designed constructed, and operated according to NRC regulations (or compatible regulations issued by the host state). In addition, to obtain a license to build and operate a disposal facility, the prospective licensee must characterize the facility site and analyze how the facility will perform for thousands of years. However, according to NRC, a rubblized site is not comparable to a low-level radioactive waste disposal facility... Nevertheless, 10 CFR Part 61 does not differentiate between what does or does not qualify as a low-level waste disposal action or facility on the basis of the quantity, forms, or range of the low-level radioactive waste to be buried."

CL-48/34 "Water intrusion is also a major concern for rubblized or entombed sites, and the fact that most nuclear power plants are situtated in shallow water table or flood plan locations may limit the viability of these options."

CL-48/35 The above reasons illustrate the lack of a sound basis for staff conclusions that the decommissioning alternatives of entombment and rubblization are of "minor" environment impact and can be treated generically to avoid public review and full disclosure in formal public hearings. We therefore adamantly oppose such generic treatment.

Overall concerns:
NIRS and numerous other organizations and local community groups have concerns with the following overall effects of this Supplement:

CL-48/36 NRC allows "rubblization" (crumbling the concrete reactor building) of nuclear reactors, without opportunity for public intervention until the action is completed.

CL-48/37 NRC allows portions of sites to be "released" from regulatory control before the whole site is released

CL-48/38 NRC opens up two "entombment" options.

CL-48/39 NRC ignores radiation dangers after decommissioning is done and utility is relieved of liability.

CL-48/40 NRC ignores radiation exposures to children and other vulnerable members of the population and creates a fictitious highest exposed "critical group" based on unsubstantiated assumptions.

CL-48/41 NRC ignores radiation offsite and permits utilities to ignore it in decommissioning planning. NIRS calls on the NRC to incorporate offsite contamination into all evaluations of environmental impacts.

CL-48/42 NRC prevents the National Environmental Policy Act from applying to most of the decommissioning process. (The claim appears to be that this proposed Supplement 1 satisfies the Environmental Policy Act for most of the decommissioning issues)

CL-48/43 NRC cleverly makes most aspects of decommissioning "generic" rather than site-specific, so they cannot be legally reviewed or challenged at individual sites.

CL-48/44 NRC redefines terms to avoid local, site specific opportunity to question, challenge and prevent unsafe decommissioning decisions.

CL-48/45 NRC sets arbitrary and unsubstantiated (low, medium and high) environmental impact categories for each of the steps in decommissioning, to give the appearance that they have minimal effects, to justify not fully addressing them now and to prevent their inclusion in site-specific analysis.

CL-48/46 NRC is removing the requirement for a license amendment when changing from a nuclear power operating license to a nuclear materials possession-only license. (With no license amendment, there is no opportunity for public challenge or adjudicatory processes)

CL-48/47 NRC is attempting, with this supplement, to legally justify the removal of the existing opportunities for community involvement and for legal public intervention until after the bulk of the decommissioning has been completed. This includes such activities as flushing, cutting, hauling and possibly rubblizing of the reactor.

CL-48/48 NRC states that the portion of the decommissioning regulations (10 CFR 20 section E and its Environmental Impact Statement, NUREG 1496) that set the 25, 100 and 500 millirems per year allowable public dose levels from closed, decommissioned nuclear power sites, are not part of the scope of this Supplement

CL-48/49 NRC defines decommissioning, in part, to include the "release of property for unrestricted use...." and the "release of property under restricted conditions..."
NIRS stands firmly against the "release" of radioactively contaminated materials into daily consumer use and commerce or unregulated disposal

Respectfully submitted,

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Letter 49, page 1

Doris Mendiola - Comments on Decommissioning Nuclear Power Reactors EnvironmentalImpact Statement | Page 1

From: Eileen Greene <egreene@ikano com>
To: <dgeis@nrc.gov>
Date: 1/31/02 2.23AM
Subject: Comments on Decommissioning Nuclear Power Reactors EnvironmentalImpact Statement

11/09/01
66 FR 56721
(49)

CL-49/1 I am very concerned that children, who are much more susceptible to the effects of radiation, may not be being looked at in the Environmental Impact Statement. This is a very serious issue, & if left unaddressed, would not only be morally wrong, but could lead to a horrible name in history for the NRC, & possibly legal action.

CL-49/2 I am hopeful that you will act in the interest of the public, & listen to the concerns of all of the communities that will be affected by the by-products of nuclear energy. Offsite radiation is something that must not be ignored.

Thank you for looking into this.

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Template = ADM - 013

E-RIDS = ADM - 03
Call = M. Masnik (MTM2)

From: CAN <can@nukebusters org>
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Date: 1/31/02 1:13PM
Subject: Comments onGeneric Environmental Impact Statement onDecommissioning

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11/9/01
66 FR 56121
(50)

Template = ADM-013

E-RIDS = ADM-03
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Citizens Awareness Network
Comments on Draft Supplement 1 of the GEIS on Decommissioning Reactors

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CITIZENS AWARENESS NETWORK

January 30, 2002

Chief, Rules and Directives Branch
Division of Administrative Services
Mail Stop T-6 D59
U.S. Nuclear Regulatory Commission
Washington, DC 20555

RE: Generic Environmental Impact Statement on Decommissioning Nuclear Facilities: Draft Supplement 1 Dealing with Decommissioning of Nuclear Power Reactors

Dear Sir or Madam:

By this letter, the Citizens Awareness Network (CAN) formally submits written comment on the draft supplement1 Generic Environmental Impact Statement (GEIS) involving the decommissioning of nuclear reactors. CAN provided the Nuclear Regulatory Commission (NRC) with verbal comment at the draft supplemental GEIS scoping meeting held in Boston, MA on May 17, 2000 and written comments in July 15, 2000. CAN is a volunteer, grassroots organization with chapters in reactor communities in MA, CT, VT and NY. We have over 3,300 members and represent the views of many thousands more. We attempted to email these comments on 1/30/02, but were unable due to server problems.

CL-50/1 The regulations are in violation of the appellate court decision in CAN v NRC. The court ruled that decommissioning remained a "major federal action" requiring National Environmental Policy Act (NEPA) compliance. CAN strongly urges the NRC to enforce NEPA compliance and require decommissioning

CL-50/2 reactors to undertake site specific Environmental Impact Statements (EIS). In addition CAN requests the Commission withdraw the proposed draft and revise it so that it complies with the ruling of the court decision. Until such a time when site specific EIS's are done, CAN requests that paragraphs below be incorporated into the draft supplement 1 GEIS.

CL-50/3 The Appellate Court justices opined that your agency was in violation of its own regulations and Rulemaking process in approving the experimental decommissioning at the Rowe reactor without a decommissioning plan and an environmental assessment. In addition, the court has ruled that decommissioning is a major federal action and requires NEPA compliance. "An agency can not skirt NEPA or other statutory commands by exempting a licensee from compulsory compliance, and then simply labeling its decision "mere oversight" rather than a major federal action. To do so is manifestly arbitrary and capricious." We believe NEPA

compliance is mandatory for decommissioning. A Generic Environmental Impact Statement can not substitute for an individual EIS, as computer modeling can not substitute for actual testing

CL-50/4 CAN believes it is essential for NRC to continue to define decommissioning as a major federal action. As the Appellate Court opined "....., it is undisputed that decommissioning is an action which, even under the
CL-50/5 Commission's new policy, requires NEPA compliance 10C.F.R S 51.95(b.)" CAN believes that streamlining the process for nuclear corporations and setting aside NRC requirements abdicates the responsibility to protect the health and safety of the workers, the public, the environment, and violates citizen due process. Nuclear power generators should not be given broad discretionary powers to regulate themselves, which this Draft proposes. Protecting public and worker health and safety and the environment must remain the NRC' mission.

CL-50/6 Can requests the NRC restore distinct categories between reactor operations and cessation and that the Possession Only License should be reinstated. It affords citizens the possibility for a hearing prior to reactor decommissioning. The opportunity for a hearing must not be withdrawn by the Commission. The hearing is essential for communities to participate in matters that vitally effect them. To offer a hearing at the termination of the license rather than at the cessation of operations sets aside meaningful citizen participation.

CL-50/7 Major component removal should not be approved with the submission of a Post Shutdown Decommissioning Activities Report (PSDAR). A clear definition must be established to clarify what constitutes major and minor component removal. Approval of decommissioning plan should be required before major decommissioning activities begin The PSDAR does not afford the community effective input into the decommissioning
CL-50/8 process since this document is a skeletal outline of generalized activities planned by the licensee. The elimination of sub part M hearings coupled with the instituting of sub part L further inhibits public participation and is a violation of citizens constitutional rights guaranteed under section 189a of the Atomic Energy Act.

CL-50/9 The PSDAR skirts accountability and obstructs required public participation. The PSDAR does not require a clear description of the methodologies so that the public can understand what will be taking place during decommissioning Only with a sufficiently detailed plan, can the public meaningfully research, investigate, formulate comments and questions, and possible objections to the decommissioning activities. A meeting does not afford citizens the level of institutional accountability necessary given the dangers of enviro-toxic contamination inherent in the reactor cessation Informational meetings, as experienced at Yankee Rowe, CT Yankee, Maine Yankee, and Millstone Unit 1 obfuscated, confused, and ignored the concerns of local citizens. Both the Federal District Court and the Appellate Court chastised the agency for this approach. If the community has concerns, and there is no regulatory recourse save one "meeting" with NRC, the Commission will, in fact, create polarization between the community and regulator leading to erosion of public confidence in the NRC

Further Comments:

CL-50/10 1. Health problems in the community must be determined and taken into consideration when decommissioning plans are being established since continued exposure to radiation through routine decommissioning releases and the inadvertent release of hot particles can jeopardize the health and safety of the public.

CL-50/11 2. New environmental assessment documents must be required, as old assessments are outdated and have been found to be inaccurate both on and offsite.

CL-50/12 3. Although the NRC claims numerous successful decommissionings of nuclear sites, few large-scale reactors that operated for decades have completed successful decommissioning Decommissioning remains experimental. Resources and time required for decommissioning a site have been routinely underestimated. More importantly, worker doses have been repeatedly underestimated. Safe decommissioning is about radiological control and the need to limit exposures to the workers. Nuclear corporations have failed to do this because of inexperience and a lack of enforcement by the NRC. With over 100 nuclear reactors yet to be decommissioned in this country, cutting decommissioning exposures by 200-300 person-rem per reactor will reduce the nation's nuclear workforce exposures by 20,000-30,000 person-rem.

CL-50/13 4. Nuclear reactors, through planned and unplanned radioactive releases, can create plumes of contamination, which migrate offsite. Yankee Rowe currently has a plume, which reached springs, feeding into the Deerfield River where residents recreate. Connecticut Yankee has plumes of tritium and other radionuclides which have migrated into the aquifer and the Connecticut River for decades. Accountability (i e. remediation and/or long term monitoring) for plumes of contamination that have
CL-50/14 offsite consequences must be established. Furthermore, accountability must be established for routine NRC-regulated releases, which have accumulated in the discharge pathways Big Rock Point, Millstone Unit 3 and other reactors have identified contaminated sediment caused by such releases Remediation must capture such plumes both onsite and off.

CL-50/15 5. Methodology must be established to locate and collect for proper disposal contaminated tools, soils, concrete blocks, plywood and other building materials that may have been taken offsite by workers during reactor operation such as was the case at Connecticut Yankee and Yankee Rowe.

CL-50/16 6. In addition to onsite worker doses, decommissioning exposure calculations must capture and include doses incurred by workers involved in offsite reactor decommissioning activities i.e. shipping, decontamination, smelting, recycling etc. of all radioactive materials and components.

CL-50/17 7. Using an adult male as the average member of the critical population for dose calculations in site release criteria does not establish effective clean-up standards. The adult male assumptions address workers during reactor operation, however when reactor sites are released for unrestricted use the "average member" of the critical population requires the inclusion of children since they bear the greatest burden of the affects of ionizing radiation as described in the Biological Effects of Ionizing Radiation (BEIR) V report.

CL-50/18 8. The License Termination Plan (LTP) should be established, reviewed by the public and approved by the NRC before site remediation begins.

CL-50/19 9. Partial release of property for unrestricted use should not be allowed until the LTP has been established, reviewed by the public, approved by the NRC and implemented on the given piece of land. Furthermore, methodology should be established for preventing recontamination of the released

property through environmental migration e g. rain, wind, etc and future decommissioning activities i e excavating, tracking or relocating contaminated materials.

CL-50/20 11. Clear methodologies should be established for the clean up of transuranics and hot particles. Yankee Rowe failed to include transuranic measurements in its LTP and currently Connecticut Yankee intends to avoid doing direct alpha measurements (and beta measurements) through less expensive surrogate measurements of easier-to-detect radionuclides through less expensive surrogate measurements of easier-to-detect radionuclides. Surrogate measurements must not be allowed at sites where consistent ratios of radionuclides do not exist.

CL-50/21 12. The burial of radioactively contaminated material as a means of *site remediation* is unacceptable for property that is to be released for unrestricted use. Rubblization (the burial of contaminated rubble) must not be permitted under any circumstances. The permission to build nuclear reactors hinged upon the utilities' commitments to regulators and the community to restore the site to "green fields". Rubblization is a blatant default on cleanup commitments, is a gross injustice to reactor communities and is a regulatory cave-in to utilities' desires and financial needs. In response to rubblization CAN also incorporates by reference Contention's 5 2 and 5.3 submitted by the organizations to the Commission on March 12, 2001 regarding Haddam Neck Reactor's License Termination Plan (Docket No. 50-213-OLA).

CL-50/22 13. Given the repeated and serious exposure of workers during decommissioning of reactor sites, an onsite NRC inspector should be required throughout decommissioning to protect worker health and safety.

CL-50/23 14. Nuclear corporations should not be allowed to decommission reactors under an operating license through a series of amendments nor should they be allowed to create an Independent Spent Fuel Storage Installation (ISFSI) under an operating reactor license when they are decommissioning Decommissioning reactors installing ISFSI's should be required to go into a part 72 license to provide adequate regulatory oversight protect public health and safety. The part 72 general license provision for creating an ISFSI at an operating reactor was never intended to cover a decommissioning reactor when regulatory oversight is minimized.

CL-50/24 15. Public participation must be instituted for the creation of the ISFSI. At present, the creation of an ISFSI falls into a regulatory no man's land At the NRC pre-hearing on the Yankee Rowe LTP, the NRC administrative law judges were instructed by the commission not to address any contentions concerning the storage of high-level radioactive waste. The creation of the ISFSI has serious consequences for each reactor community that could last hundreds of years. That the public can not participate in the process - give comments, request hearings, intervene - is unreasonable and undemocratic.

CL-50/25 16. Given the recent experience with wild fires at the Los Alamos and Hanford Nuclear Reservation and now the potential for flooding and massive soil erosion, the NRC should re-evaluate risk assessments and dose calculations for decommissioning reactors.

CL-50/26 17. Methodology must be established to determine the extent of underground rad waste contamination and burial. The Multi-Agency Radiological Site Survey and Investigation Manual (MARSSIM) establishes measurement criteria for only 6 inches below the surface of soil. MARSSIM does not

address the serious problem of locating and remediating underground contamination. Before 1980, the NRC in fact allowed the burial of rad waste onsite. A General Accounting Office (GAO) investigation found that the routine burial of rad waste 4 feet deep at reactor sites before 1980 occurred without adequate documentation.

CL-50/27 19. Each reactor community should have representatives trained in MARSSIM and other protocols by the NRC so that they can effectively comment and express their concerns about the adequacy of the procedures being used.

CL-50/28 20 In the aftermath of September 11th, NRC and licensees must address earlier assumptions that decommissioning was less dangerous than operation and that security measures and insurance could be reduced because of it. Nuclear fuels pools as well as on site dry cask storage of high level waste are targets for terrorism. In fact decommissioned sites could be selected as targets because there is less security and oversight during decommissioning and the monitoring of the ISFSI. NRC must required increased security and the reinstatement of insurance provisions. Additionally, emergency preparedness drills and the EPZ should be reestablished. KI should be stockpiled in communities since the potential for off site consequences from a terrorist attack is possible.

Sincerely,

Deb Katz
Executor Director
Citizens Awareness Network

Rosemary Bassilakis
Researcher
Citizens Awareness Network

1-31-2002 11:59PM FROM DREY 314 725 7676 P 1

Kay Drey 515 West Point Ave University City, MO 63130

January 30, 2002

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US Nuclear Regulatory Commission
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Attn: Michael Masnik, Ph.D.
Fax: 301-415-3061

11/9/01
66FR56721
(51)

Comments on the Draft Supplement to the 1988 "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities."

CL-51/1 The primary reason I am submitting the following comments is to urge the Nuclear Regulatory Commission to maintain its commitment to study the operating history and resulting contamination of each reactor on a site-specific, not generic basis — in its effort to design appropriate decontamination and decommissioning requirements for each site. Only in this way can there be any hope of achieving the requisite, long-term isolation of the contaminants from the human environment.

CL-51/2 1. Site specificity: Many questions regarding decommissioning require site-specific and reactor-specific analyses. The Callaway plant, for example, here in Missouri, is located about 5.5 miles away from the Missouri River, the source of the plant's cooling water and the depository for its liquid effluent. It would seem that testing would be needed of the unusually long effluent-discharge pipe in order to determine where leakage may have occurred during the plant's operation and where soil excavation may therefore be required as a part of the decommissioning.

Sediment samples would be needed where the discharge pipe releases the plant's effluent into the Missouri River. Without such site-specific analyses, a determination of the extent of the riverbed's contamination would not be possible. According to a series of reports published in 1970, 1974 and 1976, by the US Environmental Protection Agency's Office of Radiation Programs, radioactive fission and corrosion products traceable to Dresden-One, Haddam Neck, and Oyster Creek had accumulated in those reactors' discharge areas in the Kankakee River, the Connecticut River and Barnegat Bay, respectively. (BRH/DER 70-1; EPA-520/3-74-007; and EPA-520/5-76-003).

CL-51/3 Reactor contaminants in the sediments in the EPA studies included cesium-134 and -137, cobalt-58 and -60, manganese-54, and antimony-125. With evidence that these isotopes were able to bypass the liquid waste filters, it would seem probable that other fission, activation and corrosion products could have, too. And of course some reactor isotopes are extremely long-lived. I am reminded of the following discussion in a 1978 NRC publication on decommissioning:

> Based on the guidance put forth in [Atomic Energy Commission] Regulatory Guide 1.86 ["Termination of Operating Licenses for Nuclear Reactors," June 1974], entombment of a reactor facility requires the encasement of the radioactive materials in concrete or other structural material sufficiently strong and structurally long-lived to assure retention of the radioactivity until it has decayed to levels which permit unconditional release of the site. (In previous reactor decommissioning, it was assumed possible to entomb the reactor pressure vessel and its internal structures within the biological shield since the principle source of radiological dose was cobalt-60, which decays with a relatively short half-life (5.27 years) Thus, within about 100 years, the residual

Template = ADM-013

E-RIDS = ADM-03
Cadd = M. Hasoik (MTM2)

2-01-2002 0:00AM FROM DREY 314 725 7676 P.2

> radioactivity will have decayed to levels indistinguishable from normal background, well within the safe structural lifetime of the entombment structure. The presence of any niobium-94 was ignored. The amount of nickel-59 formed in the relatively brief operating life of these early plants was sufficiently small as to present no significant hazard. However, in large power reactors that have operated for 30-40 years, the induced niobium-94 and nickel-59 activities in the reactor vessel and its internal structures are well above unconditional release levels and, since nickel-59 has an 80,000 year half-life and niobium-94 has a 20,000 year half-life, the radioactivity will not decay to unconditional release levels within the foreseeable lifetime of any man-made surface structure. ("Technology, Safety and Costs of Decommissioning a Reference Pressurized Water Reactor Power Station," NUREG/CR-0130; pp. 4-5, 4-6; emphasis added)

CL-51/4 Nickel-59, mentioned above, is produced when the nickel-58 in stainless steel captures electrons. Since the EPA found corrosion products in the sediment of several metals for which they tested, is it not possible that other metals subjected to the reactor's hostile environment (repeated cycles of temperature and pressure; high neutron fluxes, harsh chemicals, etc.) may also have degraded or dissolved, and migrated out of the plant? Could they be detected in the sediment if tested? Some of the corrosion products identified in the oxide layer ("crud") of various reactors include isotopes of iron, zinc, molybdenum, tungsten, titanium, and carbon. (I would be happy to send a copy of the comments I submitted to the NRC on July 16, 1980, regarding the Draft Environmental Statement on the proposed use of chelates to decontaminate Dresden One in Illinois. Information on chemical decontamination is cited from AEC, EPRI, GE reports, and more.)

2. Rubblization: This word is relatively new to me. But amazingly, the concept is not. I remember when our family first drove by the Elk River reactor in Minnesota on a brief, educational side trip with our children. This was some time before November 1974, when I first began reading and working fulltime against nuclear power. When we drove by Elk River again, four or five years later, the plant had completely disappeared.

Several years after that I learned from one of the former Elk River workers that they had used explosives to "dismantle" the plant. I was incredulous then; I still am. The list of explosives employed for the rubblization of this one small reactor is impressive, or more precisely, worrisome: PETN (pentaerythritol tetranitrate), 85% high velocity gelatin dynamite, cast TNT (high detonation pressure primers), binary energy system (liquid explosives) and water gel explosives. (From the revised "AEC-Elk River Reactor Final Program Report," November 1974, p 31). To quote further from that report:

> For obvious economic reasons, it was desirable to dispose of as much demolition debris as possible in local landfills. Because there were no burial facilities for radioactive materials in the State of Minnesota, and because of existing adverse public reaction to the nuclear industry from certain sectors, great pains were taken to insure that little, if any, radioactivity remained in the structures that were disposed of in Minnesota. For these reasons, the term 'detectable reactor originated radioactivity' or DROR was specified contractually and defined for this project. It should be emphasized that DROR as defined below is unique to the Elk River Reactor project, is a one-time requirement, and there is no intent to suggest a guideline for future decommissioning actions or to supercede guidelines issued by the [AEC] Director of Regulation. The term DROR was applicable only to demolition rubble that was to be left in the State of Minnesota and was defined procedurally by a special sampling and analytical method. (pp. F-4, -5)

Elk River was indeed a tiny reactor — its net electrical output was only 22.5 megawatts, compared with the Callaway plant which was designed and built to provide 1120 megawatts and was subsequently, somehow, allowed to be uprated to 1171 megawatts. To quote further from NUREG/CR-0130:

> [Elk River had operated] for the equivalent of only 2.5 EFPY [effective full power years] when it was dismantled. Thus, the concentrations of the longer-lived radionuclides in the Elk River reactor were quite small compared to the concentrations that will be present in a large PWR [pressurized water reactor] after 30 EFPY of operation. (p. 7-16; emphasis added)

CL-51/5 I understand that Elk River is the only US commercial reactor that has been completely dismantled down to its original greenfield state. It so completely disappeared, in fact, that it is not even mentioned in the "Draft Supplement," in the tables of "permanently shutdown plants" (for example, at pp 3-27, 4-44, and Table F-1). And speaking of Appendix F, by the way: please note

CL-51/6 in Table F-2 that the Callaway plant is located in Missouri, not in Montana.

CL-51/7 It is extremely important for the NRC to level with the public about the potential hazards of the concrete debris and related rubble from the dismantled plants. The porous concrete floors get radioactively contaminated during the operation of the plant. "Radioactive corrosion products and fission products from failed fuel, which are transported throughout the station by the reactor coolant streams, are the principal contributors to the more mobile radioactive contamination on piping, floors, and pool surfaces." (NUREG/CR-0130, June 1978, p.7-15.) Radioactive products can also enter the primary cooling water from pin-hole leaks in the fuel rod cladding; from the fissioning of "tramp uranium" left on the surface of the fuel rod during the fabrication of the fuel; and out of defective welds at the top and bottom of the fuel rod. The cooling water gets contaminated, and it can and does leak onto the plant floors during various routine and accidental activities.

Radioactive fission gases that escape out of the fuel rods can also escape out of the reactor vessel. Some dissolved and entrained noble gases are released to the environment in the plant's liquid wastes. Some are vented or purged into the atmosphere. And some migrate into the porous walls, the base mat (floor) or other sub-grade concrete, or the dome or roof of the buildings. Radon gas, for example, once in the interstices of the concrete, can decay or break down into radioactive solid daughter products, such as lead-210 that remains radioactive for more than 200 years. Xenon isotopes that permeate the concrete break down into cesium, including Cs-135 with a half-life of 2.3 million years. And krypton, also a fission gas, breaks down into rubidium, and then into strontium. As was admitted during the years of nuclear weapons testing and fallout, cesium and strontium are notoriously radiotoxic. As daughter products of the fission gases, they could remain entrapped in the rubblized concrete, releasing radioactive particles and rays into the air for at least ten half-lives, or they could leach into the groundwater. The rate of dispersal of the radioactive and hazardous contaminants in the rubble cannot be accurately predicted. Natural phenomena, for example, could affect the susceptibility of the radiation to be released. (Regulatory Guide 1.86, p 2)

CL-51/8 Because of the potential presence of highly radioactive "hot particles" in unexpected areas throughout the plant, particularly in the reactor containment building, the rubblized materials proposed for on-site disposal could be more than just "slightly" contaminated. Contrary to the Draft Supplement, at page 1-7, for example, I think it is important to note that the rubblization of concrete could have radiological impacts as well as non-radiological ones. This is of special significance if

CL-51/9 explosives are to be used for the demolition, which will generate radioactive fugitive dust.

CL-51/10 How could the NRC, with its limited surveillance staff, make certain that each licensee would search conscientiously for contamination on the interior as well as the exterior surfaces of pipes,

CL-51/11 drain lines and ductwork? To what extent will chemical decontaminants be used? Chelating agents not only dissolve radioactive isotopes (such as corrosion products), but they keep them in solution and thus subject to widespread dispersal in the environment. (I likened this phenomenon to burying radioactive wastes with roller skates on.) If chelates are used during decommissioning, will the discharge water containing the dissolved, chelated radioactive wastes be kept isolated from the environment until the chelates are broken down?

You will perhaps be interested in the following comment by Robert Bernero, who at the time was the NRC's assistant director of material safety studies. He was quoted in a June 18, 1974, Miami Herald article as saying that "the NRC staff currently favors a policy that would require decontamination and dismantling after a unit is retired from active service. 'It doesn't make any sense just to seal up a nuclear power plant and leave it,' he says. 'An orderly society should select burial grounds for its nuclear waste. It should not expect to use power plant sites for that purpose.' " (emphasis added)

CL-51/12 I find it hard to believe that the massive structures of concrete and steel reinforcing bars found in a typical commercial power plant could be rubblized. The complexity and size of the task seem overwhelming. What technologies could be used to dismantle the base mat of the Callaway reactor building, for example: 13,400 tons of concrete plus 1,470 tons of intertwined #18 reinforcing steel

CL-51/13 bars? Do most 1,000-megawatt pressurized water reactor containment buildings have similar base

CL-51/14 mats? How can the radioactive content of this structure be accurately estimated? If rubblization

CL-51/15 were technologically achievable, where on a plant site could the wastes be stored in perpetuity? Would that be above grade or below? Would a leachate collection system be required where the rubble is stored in order to monitor for potential impacts on the groundwater?

CL-51/16 Since the NRC would no longer have regulatory authority over the site, what governmental institution or corporation would be entrusted with the long-term collection, monitoring and analyses of the groundwater samples? Who would determine if remediation were needed; who would be

CL-51/17 liable for the costs of off-site contamination or other accidents? Who would be responsible to

CL-51/18 protect against the inadvertent recycling of radioactively contaminated building rubble and soil into new construction or as fill, a possibility mentioned but basically discounted in SECY-00-0041, a letter about rubblized concrete dismantlement, from William Travers, NRC Executive Director for Operations, to the Commissioners (February 14, 2000)?

CL-51/19 3. Costs: Because of current efforts to restructure and deregulate the electric power industry, decisions about decommissioning could be driven by economic considerations, not by safety — by efforts to cut costs in order to stay competitive. I believe the electric utilities should not be relieved of liability for their decommissioned reactors

CL-51/20 Because of deregulation, the US public must rely more than ever upon the NRC to maintain its authority and responsibility to identify, assess and regulate the full range of potential, high-risk impacts of every commercial reactor — before, during and following its decommissioning. The NRC is our only option.

CL-51/21 4. The threat of terrorism: With terrorism now a legitimate concern in the United States, the potential of a suicide assault on a nuclear plant — whether the plant is operable or decommissioned — must be assessed plant by plant, not generically.

CL-51/22 No facility exists for the permanent disposal of the nation's high-level waste (irradiated reactor fuel), and only one burial site, in Barnwell, SC, is currently available to most reactors for the rest of their wastes (their so-called "low-level" wastes, which ultimately could include the rubble and dismantled components from decommissioned plants). That one "low-level" waste facility, however, that is serving most of the nation, is expected to be closed in the near future to non-Southeast-US reactors.

Because of the lack of off-site disposal facilities, it is understandable that the NRC staff would be promoting rubblization, and on-site burial and bunkering of the rubble after decommissioning. According to the Code of Federal Regulations, Title 10, 50.82; "Decommissioning will be completed within 60 years of permanent cessation of operations." That time frame takes in all reactors in operation today. Even if off-site disposal space were available to host all the nation's decommissioning rubble, the cross-country transporting of such large volumes of waste would probably be prohibitively expensive and would no doubt be protested by the residents of the corridor communities.

CL-51/23 The transformation of the nation's abandoned nuclear power plants into de facto waste facilities is worrisome from environmental, safety and national security standpoints. To quote from President George W. Bush's State of the Union address yesterday: "Our discoveries in Afghanistan confirmed our worst fears .... And the depth of their [our enemies'] hatred is equaled by the madness of the destruction they design. We have found diagrams of American nuclear power plants and public water facilities ...." (NYT, Jan. 30, p. A22; emphasis added)

Articles published for decades have predicted today's disturbing conundrum: The Wall Street Journal on October 12, 1977 — "Scrapping the atom; U.S. is facing problem of how to dismantle used nuclear reactors; Agency hit for not having long-term burial plan; Tombs and mothballing; Can a big plant be cut up?" The Miami Herald on June 18, 1979 — "Nuclear cleanup: Power plants generate a long-term dilemma." The Progressive in December 1977 — "A Landscape of Nuclear Tombs: What will we do with deactivated reactors, and who will pay for doing it?" The Interdependent, of the United Nations Assn., September 1977 — "How do you get rid of a dead nuclear plant?" Technology Review of MIT, June/July 1979 — "Decommissioning Commercial Nuclear Reactors: Nuclear power plants do not last forever. In the United States some large commercial reactors are scheduled for decommissioning within the next 20 years and many others will follow. But the process and its costs are still subject to uncertainties."

The more I learn about nuclear power's radioactive waste, the more I wonder if and when its proponents will admit that no safe solution may ever be found.

5. Concerns — from the past and into the future:

CL-51/24 Surely the most surprising and disturbing pronouncement in the "Draft Supplement" appears on page 1-7: "The decommissioning process continues until the licensee requests termination of the license and demonstrates that radioactive material has been removed to levels that permit termination of the NRC license. Once the NRC determines that the decommissioning is completed,

the license is terminated. At that point, the NRC no longer has regulatory authority over the site, and the owner of the site is no longer subject to NRC regulations." (p 1-7; emphasis added)

CL-51/25 The federal government (the US Atomic Energy Commission and its progeny) initiated and funded the promotion of nuclear power. How, then, can it walk away from the long-term surveillance of the plant sites, even though it will have declared the residual radioactive contamination to be at permissible levels? As happened here in St. Louis at the Mallinckrodt Chemical Works, buildings and land contaminated in the years 1942-1957 were cleaned up to contaminant levels declared to be safe for unrestricted use by the public. Not many years later, however, some of those same buildings and open spaces were found to require major additional remediation because radiation standards had became more stringent, reflecting a greater understanding of the health hazards of radiation. Monitoring equipment also had become somewhat more sophisticated.

CL-50126 Concerns and unknowns about the decommissioning of nuclear power plants started many years ago. In January 1975, for example, Sheldon Meyers, as director of the EPA's Office of Federal Activities, included the following observation about the Callaway plant's draft environmental statement: "The section in the draft statement regarding decommissioning of the plant indicates the plant site may require long term surveillance after being shut down. This section should be expanded to provide an estimate of the length of the surveillance time and the length of time the land must stand unproductive. It should also identify who will be responsible for the surveillance activity and who will incur the cost." (published by the NRC in March 1975; p. A12, emphasis added) Why has no one answered these concerns prior to now? Or are there no credible answers?

6. Some concluding comments:

CL-51/27 I guess one of the reasons I wanted to comment on this "Draft Supplement" is because it so dramatically reflects the backward world of Alice in Wonderland and of commercial nuclear power: "Sentence first — verdict afterwards." **Make a permanent mess first — try to figure it out afterwards.**

Because I have been studying and opposing nuclear power for 27 years, it should not surprise you that my dream would be for America's nuclear electric utilities to expedite the shutdown of all their reactors. The questions raised above — and I have many more — are not meant to be hostile and are certainly not meant to suggest that decommissioning a reactor should be made more burdensome, dangerous or costly than its continued operation. On the contrary.

The longer the reactor operates, the greater will be (1) the levels of radiation to which the demolition workers will be exposed, (2) the volumes of radioactive waste generated and stockpiled; and (3) the risk of a major radiological emergency. And now I guess we should add, the greater will be the potential for acts of radiological sabotage or terrorism (as per 10 CFR Part 73).

CL-51/28 The reactors must be decommissioned in a prudent manner that will seek to protect the health and safety of the workers and the public. In the United States we must rely on the Nuclear Regulatory Commission for its knowledge, guidance and surveillance. I hope that trust is warranted.

Sincerely,

Kay Drey

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RE: Draft Supplement 1 to the Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities, NUREG-0586

Dear Madam or Sir:

The following comments on Draft Supplement 1 to NUREG-0586 are submitted on behalf of the Pennsylvania-based Environmental Coalition on Nuclear Power (ECNP) We

CL-52/1 concur with and adopt by reference the comments of the Nuclear Information and Resource Service, submitted by Paul Gunter

In our state, decommissioning of the Shippingport reactor, Saxton and Waltz Mills experimental reactors, and the Quehanna industrial nuclear facility and former reactor have occurred. The old Molycorp thorium processing facility near Washington PA is currently in the early stages of decommissioning. The Peach Bottom Unit 1 and Three Mile Island Unit 2 reactors have been awaiting decommissioning for more than twenty years. The nine other operating commercial reactors will ultimately also require decommissioning upon expiration of their operating licenses, as will numerous other industrial and research nuclear facilities

CL-52/2 . This Supplement to the Final GEIS fails to address decommissioning of nuclear facilities other than commercial reactors. It therefore fails to take into account the subject of NUREG-0586: the environmental impacts of decommissioning nuclear facilities -- all nuclear facilities

CL-52/3 Moreover, in order to assess the full environmental impacts of each facility's decommissioning, it is necessary to take into account its impacts in concert with the impacts of all other nuclear facilities that contribute additive radiological and other contamination to the biologic system.

Pennsylvania remains the Host State for "disposal" of the "low-level" radioactive wastes generated in the Appalachian States Regional Compact, despite failure of the contractor, Chem-Nuclear Systems, to site a LLRW disposal facility. The Department of Environmental Protection recently adopted expanded permissible disposal of radioactive materials at municipal landfills Pennsylvania has not yet obtained Agreement State status. Our law provides for regulation by the state of radioactive materials and wastes if NRC releases them from its regulatory control.

Moreover, the Pennsylvania Constitution provides that the people of the Commonwealth have the right to a clean, livable environment for themselves and for their descendants. Thus, for these several reasons, the decommissioning decisions of the NRC are of substantial concern to residents of this Commonwealth, where the nation's worst commercial nuclear power accident has not been forgotten.

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CL-52/4 A fundamental obligation of the NRC is to protect the health and safety of the public and the quality of the environment – the general welfare – from radiation-related harm Failure of NRC regulatory control to require that the radioactively-contaminated materials and wastes remaining at a reactor site post-closure will not be released into the biosystem -- as described in this document and in NRC regulations – constitutes a serious violation of the provisions of the Atomic Energy Act, as amended, Chapter 1, and of the National Environmental Policy Act. Any such decisions by the NRC are therefore arbitrary and capricious, and contrary to both the AEA and NEPA.

CL-52/5 In practice, in the decommissioning of reactors the NRC's Decommissioning Rule has both allowed release into the environment of radioactive materials and wastes and disallowed members of the affected public from an opportunity for adjudicatory hearings in advance of

CL-52/6 decommissioning activities. These denials of access to the judicial system are currently being extended in the form of NRC's proposed Rule, "Change of Adjudicatory Process," compounding

CL-52/7 the illegalities inherent in this Supplement. Increasingly, no forum is available to citizens in which to exercise their rights under the Federal Administrative Procedure Act. This is yet another reason that this Supplement is unacceptable and should be withdrawn.

CL-52/8 Furthermore, a "generic" EIS cannot provide adequate assurance that the unique situation and condition of each nuclear facility have been fully analyzed and accounted for Each plant is unique; each plant's impacts must be examined in relationship with all other nuclear facilities that affect the condition of the environment. In the real world environment, radioactive and hazardous materials are not necessarily static, they move; they interact with other materials; they accumulate; they may have their adverse impacts at or near their site of origin or far away from it. The totality of those impacts, upon both human and non-human inhabitants of the biosphere, must be incorporated into an environmental analysis and accounted for fully also for adversely affected individuals in any cost-benefit analysis. All issues should be examined at each plant.

CL-52/9 Exclusion of licensee decisions and actions prior to certification that plant operations have permanently ceased means that the Supplement fails to consider factors that may have negative impacts on the quality of the decommissioning activities and on minimization of the

CL-52/10 quantity and condition of the wastes resultant from the handling and removal of radioactive materials from plant structures, systems, and components. Exclusion from consideration of the fate of contaminants post-license termination also renders this Supplement insufficient and not

CL-52/11 acceptable to account for the environmental impacts of decommissioning. In effect, the NRC plans to wash its hands of any responsibility for the long term damage that may result from reactor decommissioning (and that of all other nuclear licensees' facilities and activities. It is the state or municipality and community in which a plant is located and the residents that will be required to bear the burdens of injury and costs of further clean-up after the NRC has vanished

CL-52/12 Underlying these failures of the agency's responsibility for the facilities and activities that it had sanctioned by granting an operating license and through its regulatory actions and inactions is the failure of the NRC – and of EPA – to set radiation protection standards that recognize the

CL-52/13 great varieties of adverse effects of low-level radiation on human beings. Affected populations are composed of many individuals who are not close to being that "standard man" in whom the
CL-52/14 NRC places so much faith. The trans-solutional problem of complete site decontamination is here evident: the NRC does not require the return of a decommissioned facility and site to its pre-
CL-52/15 operational radiation level. Because the costs of sequestration ("disposal") of wastes is high, and deemed to be a "burden" for the licensee, the agency continues its endeavor to allow massive deregulation -- release, recycle, and re-use – of radioactively-contaminated materials and wastes and their entry into the "free market" for resale and reuse in a host of consumer products

CL-52/16 Subsequent uses of these "slightly contaminated" materials and wastes -- in roadbeds, or construction, consumer products, or other objects individuals may contact – will each add to the
CL-52/17 radiation doses received without knowledge or consent of the recipient. These exposures from multiple unmonitored, unlabeled, uncontrolled sources are in no way accounted for, but they are additive and cumulative for that individual. They violate the fundamental tenet of radiation protection. *viz.*, that the recipient of a radiation dose that is in addition to naturally-occurring background exposures should receive a benefit equal to or greater than the risk incurred. The
CL-52/18 NRC should not permit radioactive materials or wastes to be released into the environment. That is the basic message, the rightful demand of all those who will be affected negatively by releases.

CL-52/19 As techniques of research and analysis in complex biological systems improves, it is becoming more apparent to thoughtful, careful scientists and regulators that it is imperative to include the impacts of low-level radiation exposures on all forms of living beings, not merely on
CL-52/20 humans But it is also increasingly important to incorporate into radiation protection standards
CL-52/21 low-dose effects. An EIS must also consider the effects of the synergies between and among ionizing radiation and the multitude of hazardous materials also released into the environment.

CL-52/22 • Instead, the NRC has chosen to abandon its former regulatory philosophy (defense in depth and redundancy of safeguards) in favor of the far less restrictive and less protective
CL-52/23 approach (performance-based and risk-informed). The relaxation of regulatory control is also evident throughout this draft volume. Decommissioning is the final chapter for the agency in its relationship to a given site and license. For people, the community, municipality, and state, it is the beginning of an essentially endless association with a nuclear site that may continue to
CL-52/24 endanger their lives and environment. The NRC has a statutory obligation to do a better job

CL-52/25 These admonitions have been presented to the NRC repeatedly in many Commission and staff meetings, agency panels and workshops, public hearings, legal proceedings. Until they are heard, adopted, and adhered to, this Supplement, the Final GEIS on Decommissioning of Nuclear Facilities and the Decommissioning Rule and NRC's radiation protection standards will continue to be inadequate and in violation of the applicable laws, including but not limited to the AEA, NEPA, and APA cited above. All four should be withdrawn and entirely rewritten to provide true protection from radiological contaminations.

Sincerely,

Judith D. Johnsrud

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11/9/01
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(53)

Comments of the San Luis Obispo Mothers for Peace
On the NRC Draft GEIS on Decommissioning
Nuclear Power Plants

The San Luis Obispo Mothers for Peace (SLOMFP) is aware that the comment period ended on January 30, 2002. Regardless, it is compelled to submit the following comments on the draft GEIS and observations from transcripts of NRC meetings.

Comments:

1. The SLOMFP echos the statement of Sara Barczak representing Georgians for Clean Energy at the Georgia meeting regarding the following:

CL-53/1 a. SLOMFP is troubled by the inability of the public to have adequate access to the NRC website. Prior to the censorship, the existence of the website had been viewed as a giant step forward in communication between the public and the Commission.

CL-53/2 b. A reduced security force at a decommissioned nuclear plant increases the threat of terrorism. A thorough amended review of necessary security measures during decommissioning of nuclear facilities [due to 9/11] must be compiled by the NRC and added to the supplement.

CL-53/3 c. Existing nuclear power plants are not generically designed and, therefore, a generic program for decommissioning is completely inadequate to protect public health and safety. New and site specific Environmental Impact Statements must be required to address how different power plants should be decommissioned (from the standpoint of historical operations, age-related degradation, salt water intrusionâ€¦) in the safest manner possible for each location. In the case of Diablo Canyon, new seismic information should be sought to assure the public that the process would not increase the dangers of an already dangerously sited nuclear plant.

CL-53/4 d. When California's nuclear plants received licenses for construction and operation, promises were made that high-level radioactive waste would be removed within a few years. Every deadline to open a safe and permanent repository for high-level radioactive waste has been missed. Therefore, the issue has grown; we are not accessing only the decommissioning of a power

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plant but dealing also with storage and transportation of lethal substances unforeseen when licenses were granted.

Observations:

CL-53/5 SLOMFP reviewed the four transcripts from the four meetings held by the NRC on the draft GEIS and was appalled by the waste of taxpayer dollars. The NRC gave 10 individuals representing 10 different environmental groups only 5 minutes each to express their concerns. Furthermore, it is outrageous that the NRC located these proceedings hundreds of miles from the affected communities - and those who are most concerned about the decommissioning of nuclear plants. There is no doubt that the lack of public participation was due to the location of the meetings, not to lack of public concern. Mr. Cameron has heard this concern expressed in the past.

CL-53/6 Both the NRC and taxpayers would have been better served by sending the draft GEIS to all individuals and groups that have demonstrated interest in safety issues at nuclear plants over the last two decades, with a questionnaire, a comment section, and a self-addressed, stamped envelope.

Sincerely,

Rochelle Becker February 2, 2002
San Luis Obispo Mothers for Peace

Cc: Senator Dianne Feinstein
Senator Barbara Boxer

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10. SUPPLEMENTARY NOTES

11. ABSTRACT *(200 words or less)*

This document is a final supplement to the NRC Generic Environmental Impact Sta tement on Decommissioning of Nuclear Facilities (GEIS), issued in 1988 as NUREG-0586. This supplement was prepared because of the technological advances in decommissioning operations, experience gained by licensees, and changes made to NRC regulations since the 1988 GEIS. It is intended to be used to evaluate environmental impacts during the decommissio ning of nuclear power reactors as residual radioactivity at the site is reduced to levels that allow for termination of th e NRC license. This supplement addresses only the decommissioning of nuclear power reactors licensed by the NRC. It updates the sections of the 1988 GEIS relating to pressurized water reactors, boiling water reactors, and multiple reactor statio ns. It goes beyond the 1988 GEIS to consider high-temperature gas-cooled reactors and the fast breeder reactors. This docum ent can be considered a stand-alone document and the environmental impacts described herein supercede those describ ed in the 1988 GEIS.

The scope of this supplement is based on the decommissioning activities perform ed to remove radioactive materials from structures, systems, and components from the time that the licensee certifies t hat they have permanently ceased power operations until the license is terminated. An evaluation process was develope d to determine environmental impacts from the specific activities that occur during reactor decommissioning, based on data fr om site visits and from licensees at reactor facilities being decommissioned. The data obtained from the sites were analyze d and then evaluated against a list of variables that defined the parameters for facilities that are currently operating but whi ch one day will be decommissioned. This evaluation resulted in a range of impacts for each environmental issue that may be used for comparison by licensees that are or will be decommissioning their facilities. The staff has considered public c omments received during scoping and on the draft in preparation of this final supplement.

12 KEY WORDS/DESCRIPTORS *(List words or phrases that will assist researchers in locating the report.)*

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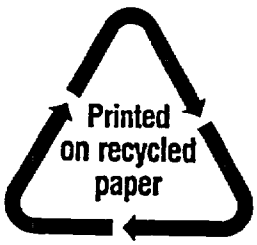

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