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NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON NUCLEAR WASTE MEETING

(ACNW)

125TH MEETING

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WEDNESDAY

MARCH 21, 2001

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ROCKVILLE, MARYLAND

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The ACNW Committee met at the Nuclear Regulatory Commission, Two White Flint North, Room T2B3, 11545 Rockville Pike, at 8:32 a.m., DR. JOHN GARRICK, Chairman, presiding.

COMMITTEE MEMBERS:

DR. JOHN GARRICK, Chairman

MR. MILTON LEVENSON, Member

DR. RAYMOND WYMER, Member

ACRS STAFF PRESENT:

DR. ANDREW C. CAMPBELL

LYNN DEERING

SAM DURAISWAMY

CAROL HARRIS

CAROL HANLON

DR. JOHN LARKINS

HOWARD LARSON

JAMES LYONS

RICHARD K. MAJOR

AMARJIT SINGH

PRESENTERS:

PAUL HARRIS

ROBERT A. NELSON

MIKE RIPLEY

I-N-D-E-X

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

(8:32 a.m.)

CHAIRMAN GARRICK: Good morning. Our meeting will now come to order. This is the first day of the 125th meeting of the Advisory Committee on Nuclear Waste. My name is John Garrick, Chairman of the ACNW.

Other members of the committee present are Milt Levenson and Ray Wymer. George Hornberger is absent today. During today's meeting, the committee will discuss the following. We will do our usual planning and future items discussion this morning.

We will talk about DOE's status report on technical issue resolution. We will talk about the ACNW 2001 Action Plan, and I will note that that was originally scheduled for Thursday for those of you still have an old agenda; and partial release of a reactor facility or site for unrestricted use.

We will discuss license termination plan review and lessons learned. We will look at the topics for the March -- for tomorrow's meeting with the Commission, the March 22nd meeting with the Commission.

And look at proposed plan ACNW reports on the following topics: entombment, partial release of

a reactor facility or site for unrestricted use; lessons learned; a license termination plan; and high level waste chemistry.

I should also announce that there will not be a formal meeting on Friday. It turns out that unavoidably that two committee members have to be absent, leaving us with below the threshold for a quorum.

There will be discussions of the -- well, between the committee members and staff, and there will be letter work performed to the extent that it can be under those circumstances.

Howard Larson is the designated Federal Official for today's initial session. This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act.

We have received no comments or requests for time to make oral statements from members of the public regarding today's sessions. And should anyone wish to do so, please contact one of the members of the staff.

And if you do, it is requested that the speakers use one of the microphones, identify themselves, and speak clearly.

Before proceeding with the first agenda

item, I would like to cover some brief items of current interest. There have been a number of NRC management changes since our last meeting.

Mr. William F. Kane has been appointed deputy executive director for reactor programs. Mr. Kane has most recently been the director of the office of nuclear material safety and safeguards, where he also served as director of the spent fuel project office from 1997 to 1999.

Mr. Martin Virgilio has been appointed director of NMSS. He current serves as the deputy director of NMSS, the position that he has occupied since December 1998.

Margaret Federline will replace Martin Virgilio as deputy director of NMSS, and Ms. Federline is currently deputy director of the office of nuclear regulatory research, a position she has held since July 1998.

Before joining research, Ms. Federline was deputy director of the division of waste management, chief of the hydrology and system performance branch, and chief of the performance assessment and hydrology branch in NMSS. So she has a very strong experience base and tradition with NMSS.

Mr. Roy P. Zimmerman will replace Ms.

Federline as deputy director of research. Roy Zimmerman is currently the deputy director of the office of nuclear regulatory regulation, a position that he has held since December 1998.

So much for the management changes. I would like to also note that former NRC chairman Shirley Jackson has added another distinguished achievement to her record, and was recently elected to the National Academy of Sciences.

She was also the first woman to receive the Black Engineer of the Year award, and is also a member of the National Academy of Engineering.

NAC Worldwide Consulting reported that U.S. utilities now have 233 spent fuel casts deplored, and plan to load another 107 in 2001. The report estimates that nearly 30 percent of all U.S. spent fuel will be in dry storage by 2010. So, dry storage has become a very important component of the spent nuclear fuel storage issue.

The Commission unanimously voted for a formal adjudicatory process for hearing requests for the potential high level waste repository at Yucca Mountain, Nevada.

On February 21 of this year the NRC approved the license termination plan for the Trojan

Reactor. Portland General Electric plans to load the spent fuel into storage casts. The plant is being dismantled and decontaminated.

Especially for the benefit of the committee and staff as background information, it should be noted that there have been several speeches given by the Commissioners in the past several months on topics of great interest to us, such as the issue of communication, spent fuel, research, and the NRC work force.

We should also note that the primary objective of this meeting is to prepare for and participate in a public meeting with the Commission. That will take place tomorrow as previously noted.

Otherwise, this meeting is patched up a little bit by unavoidable things that have occurred, including the absence of two members on Friday, and necessitating the cancellation of that as a formal meeting.

And we have scheduled today -- we had scheduled two meetings with Commissioners, individual Commissioners, and one of those has been canceled because of illness on the part of the Commissioner, but one of those remains.

So there will be some interruptions this

morning, and given that, together with being one short in our committee, we will have to work extra hard to maintain the agenda and the continuity of discussion.

So with that, I think we will proceed with our agenda, although where even there we are maybe going to modify it a little bit, because this is the part of the meeting where we really spend a couple of hours trying to figure out how to be most effective for the balance of the meeting.

So we talk about future meetings, and issues, and priorities, and those kinds of things that are aimed at making our meeting as effective as it can possibly be.

And in that regard, and having some license to deviate a little bit from standard agendas, it might be a good idea to talk a little bit about what the meetings today, or the meeting today ought to emphasize with respect to Commissioner Dicus. So maybe we ought to chat about that just a little. I don't know, Jim, if you want to --

DR. LYONS: I guess I could walk you through this with the staff's help. I put together a little bow tie's list of the items for discussion, and really this is more of a laundry list than that you need to cover each one of the topics.

CHAIRMAN GARRICK: It is a great list, and if we go through it, we might be there until tomorrow evening.

DR. LYONS: That's right, and so I think we need to kind of pick and choose from here. I think one of the key reasons that we wanted to talk to them was to talk about low level waste issues.

Howard put together a list of topics that we might want to talk about, but it seems that maybe we would want to focus on the linear non-threshold issue, and the release of solid materials, and that sort of thing, and to look at that, and maybe on the overlaps with the EPA.

But I would note -- and maybe you could ask the Commissioner about this, but I know that Chairman Zerve met with Secretary Wittman of EPA last week, and so maybe we will have some feedback. There was some hope that would bring about a new era of cooperation between the two.

CHAIRMAN GARRICK: Has there been any official release from those discussions?

DR. LYONS: I haven't seen anything.

DR. LARKINS: I haven't seen anything either.

DR. LYONS: And you might want to ask what

is going on there. But I think if you look through the list that I handed out to the members, there is several items on low level waste that you might want to talk about, and you might want to pick up on.

I think there is always the policy or legislative concern of whether there should be new legislation on the Low Level Waste Policy Act. We were looking at explaining to the Commissioner that we are actually are at this meeting looking at a number of low level waste issues, partial site release and lessons learned from the site termination plan and Part 71.

And we are also going to work on the letter for entombment, and maybe find out what the status of Part 63 and the Yucca Mountain review plan are from the Commission's standpoint, and when they think they would be ready to come out.

If you want to talk a little bit about our research report. The Commission is having a meeting in May, May 10th, to talk about research. They are bringing in former Commissioner Rogers, who was on a committee that looked at research.

Also, representatives from ACRS are going to be there to talk about their research report, which is about an inch-and-a-half thick. We are just about

finished putting that together.

And so there are a couple of other items as you look through here, and if we are going to have additional work in the next year or so in the Yucca Mountain area, the Yucca Mountain high level waste repository, to make add an additional member to the committee to deal with health physics.

CHAIRMAN GARRICK: Has this subject ever been brought up with the Commission that you are aware of, John?

DR. LARKINS: I have had discussions with several Commissioners about it, and depending on what happens next year with the budget, and if it looks like we are actually going to move forward, suggested that -- I mean, right now there is a slight increase in the budget for 2002 for the ACNW.

And so if things move forward, I would think that we might want to consider two things. One would be the addition of another member, with expertise in the area of health physics. And maybe going back to or from 8 to 10 meetings.

But those would all be contingent upon what happens with -- whether DOE actually moves forward. I think there is as good a chance now as any with all the discussions on the need for a national

energy policy that something should happen.

CHAIRMAN GARRICK: Right. Right. Okay.

DR. CAMPBELL: Jim, can I add one thing?

DR. LYONS: Yes.

DR. CAMPBELL: If the focus is low level waste, one of the issues that may come up is greater than Class C waste.

CHAIRMAN GARRICK: Yes.

DR. CAMPBELL: And it is directed related to Part 61, because the way that Part 61 is worded is that you either have to modify Part 61 to dispose of greater than Class C waste in a near surface environment, which is shallower than about 30 meters as defined in the regulation, or you have to regulate by exception on a case by case basis.

So it may come up, particularly with Commissioner Dicus, because of her experience with the low level waste.

CHAIRMAN GARRICK: Well, I think that the thing that precipitated the desire to have the meeting in the first place was a feeling of a little bit of guilt on the part of the NRC as to how accountable we were really being with respect to the whole low level waste issue.

Because on the one hand, we identify the

decommissioning as a tier one priority, and while we identify low level waste as a second tier priority, and yet if you talk to industry, the number one problem with decommissioning is what to do with the low level waste.

So there is a little bit of a disconnect there and that somehow I think we need to make darn sure that we are aware of the implications here, and are doing everything that we can to deal with it, because there are real decisions that have to be made, particularly in the reactor decommissioning arena, of what to do with this massive amount of material.

And there doesn't seem to be real answers yet, and so I think that is something that the Commission is very well aware of. But I would like to get some discussion going such that we would have some sort of inspiration if you wish as to what kind of advice to offer, because it just doesn't seem to get dealt with.

It is not very gratifying to industry, for example, to be told that you have got the academy doing a study on solid materials, because they know how the academy works, and that their schedules are slow, and that their review process is tedious, and it takes a long time to get a report.

And they would hate to be caught in the position of finally with that report done, and the NRC having some real guidance by then from either its advisory committees and the academy making a decision that would make an already decision that might have been made by industry a very costly one, and perhaps an unnecessary one.

So there is a real accountability issue it seems to me on low level waste that I am not sure is being addressed with the level of interest that it needs. So that is one of the reasons.

DR. LARKINS: If you will remember the Committee is on the record of suggesting that agency take the lead in developing a national program.

CHAIRMAN GARRICK: Right.

DR. LARKINS: And some change was necessary, and this has been what, three years ago?

CHAIRMAN GARRICK: Right. We were very explicit in making suggestions of what would constitute an adequate lower level waste program, and so we have tried to be responsive to this in the context of low level waste as an item.

But also in the context of decommission as a much more general issue. Okay. It looks as though we have some interesting things to talk about, and I

am quite sure that we are not going to get through this entire list.

DR. LARKINS: I would suggest that you really focus on the low level waste issue, and some of the things on the lessons learned from site termination, which is related to that.

And I think that the entombment and greater than Class C status of where the Commission is going on the Yucca Mountain review plan and Part 63.

I think that she might be interested in hearing something about the Committee's views on research, because it is a near term topic that the Commission is going to be taking up, and the ACNW will not be at that meeting on May 10th.

So those are four areas that I think that we could possibly consume most of your discussion.

CHAIRMAN GARRICK: Okay. I think so, and I guess it is almost time for us to leave for a nine o'clock meeting is it not?

DR. LYONS: Yes.

CHAIRMAN GARRICK: So, Milt, as a committee of one, can you do the best job that you can of getting through some of these planning items and discussions items?

And normally we don't have this part of

the meeting recorded, but, Ray, I am going to ask you to join me to go see Commissioner Dicus. And we well be back in about 35 minutes and continue.

MEMBER LEVENSON: Is there any suggestions as what could be done usefully in the absence of a quorum?

MR. SINGH: We can follow the items from the 124th meeting if you want.

CHAIRMAN GARRICK: Yes. I think the planning activity associated with future meetings, and what have you, you can do with the help of Jim. Jim is going to lead that discussion.

DR. LYONS: Right. I was going to lead that discussion anyway. So we will try to work through some of these.

CHAIRMAN GARRICK: Right. So we will excuse ourselves.

(Brief Pause.)

DR. LYONS: Okay. I think let's work through the table of contents under Tab 2, which is where we are. And we will start off with the follow-up items from the 124th ACNW meeting. I will turn this over to Amarjit and let him walk us through that.

MR. SINGH: We have three letters, KTI, Staff's, and TPA and the report to the commission.

Then we finalize the ACNW past inspection plan.

DR. LYONS: Well, we approved it in principal, but we are going to finalize it today.

MEMBER LEVENSON: And that needs voting, too.

DR. LYONS: Right. But there is time set aside in the agenda to do that.

MR. SINGH: And we also distributed the minutes from the last meeting and the assignments and the commitments, KTI vertical slice, and TSBA is Andy Campbell and John Garrick. CLST is also Andy Campbell and Ray Wymer.

DR. LYONS: Saturation zone.

MR. SINGH: Saturation zone, George Hornberger and thermal effects with Milt and Richard Major. We also have consulting news to explore, and one of the members has some more names for that.

MEMBER LEVENSON: Let me ask a question in that context.

MR. SINGH: Yes, sir.

MEMBER LEVENSON: I can't think of a specific name, but the CDC in Atlanta has been charged with reconstruction of old heritage sites and so forth, and there is a substantial number of people involved in that program who are getting good

backgrounds in data and information, and maybe that is somewhere to look for someone that might be a consultant since that is such a very active activity.

We have a draft report almost finished on the Savannah River site, and we are in the midst of reviewing one right now on the Idaho site, and we might find somebody who could be a consultant.

And the National Academy Committee that reviews the CDC is chaired by a guy by the name of Schule Texas, and he might be a contact.

DR. LARSON: We have really been most successful in getting consultants when they have been people that the staff or the members know, and they can talk to them and sort of preface them, and tell them that they are going to work for the Federal Government at the going rate.

Because if we call up somebody that we don't know and say would you be interested in being a consultant, one of the first things they want to know is how much are we going to get paid, and what are the conflicts of interest.

And so they need a prep and pep talk from people such as yourself and other members.

MEMBER LEVENSON: One of the things about people already out on the academy committees is that

they are already working for free. I know some fair fraction of these people, and this committee that Schule chairs is 14 people, and 12 of them are medical types, such as biologists, or epidemiologists, and there is one statistician, and then me. I am the reality check. So I know a number of these people.

DR. LYONS: As I said, Rod Ewing has declined the invitation to be a consultant, but he said he would continue to serve as an invited expert. And Chris Whipple --

DR. CAMPBELL: And Chris Whipple has also declined.

DR. LYONS: Oh, he has also declined?

DR. CAMPBELL: Yes, for the same reason.

MS. HARRIS: Is he going to be an invited expert?

DR. CAMPBELL: Probably not.

DR. LYONS: Okay. All right. We looked at meeting attendance, and Lynn went to the NWTRB meeting in Amargosa Valley. We sent a consultant to the repository design meeting in Las Vegas in February.

We had a high level waste chemistry working meeting here on February 21st and 22nd that Andy ran, and I think that turned out to be

successful.

Ray and I attended the Waste Management 2001 Symposium in Tucson and I only got to stay for two days and Ray got to stay for all four.

Upcoming meetings. There is the International High Level Waste Conference that is coming up in April, or the end of April and the beginning of May.

Right now, Milt, you and John are scheduled to go there. Also, I think George Hornberger is scheduled to be a speaker at that.

DR. CAMPBELL: Right.

MEMBER LEVENSON: I want to raise a question. George is a speaker in the one session, and he can stay and I will bow out. I can continue to plan to go, but I think you can resolve that today or tomorrow. You don't need an extra person there.

DR. LYONS: All right. The TSPA and integration technical exchange; we had it down here that it would be in May tentative. Has that been changed?

DR. CAMPBELL: No, if you look at your handout, titled DOE Interactions Calendar.

DR. LYONS: Agenda Item 2?

DR. CAMPBELL: Yes, Agenda Item 2.7.

Right now the May dates may -- well, it looks 14, 15, and 16 are the FEPs meeting, Features, Events, and Processes meeting in Las Vegas.

You will notice that it overlays exactly with the ACNW meeting in May. So it is unlikely that we will be able to attend that. The TSPAI meeting is the last week of June, the 25th through the 29th, and it is a five day schedule.

DR. LYONS: Okay.

DR. CAMPBELL: So those are upcoming meetings. There are some -- in talking to Jim Ferth, there may be some Appendix 7 type of meetings in the interim, between now and June, and I will get further information from GMS as they firm those things up, and the topics and stuff.

DR. LYONS: Good.

DR. CAMPBELL: But right now it is FEPs in mid-May, and TSPAI at the end of June.

DR. LYONS: All right.

DR. CAMPBELL: And we don't have a consultant for FEPs.

MEMBER LEVENSON: Or TSPA.

DR. CAMPBELL: We don't really have a consultant who is a FEPs person.

DR. LYONS: Okay. Any other meetings that

are scheduled? I see we have down here a tentative visit to Invirocare? Would somebody -- I am not even sure who is --

DR. LYONS: Well, the members had said that they thought that that would be an interesting visit sometime, and I think that's why she put it down here.

MEMBER LEVENSON: Sometime when we are in that part of the country.

DR. LYONS: So that was just sort of a place holder, and was put down there, I think, to visit that.

MS. DEERING: Jim, there was another memo that came out of the staff that went to DOE agreeing on some meetings, and ones that I wanted to note where there is a preclosure safety on July 23rd. It is in another one of these pick handouts.

DR. LYONS: Thirteen?

MS. DEERING: Yes, 13, and Milt, this may be of interest to you.

DR. CAMPBELL: Are those firm dates then?

MS. DEERING: I think these are proposed.

DR. CAMPBELL: Okay. Because the interactions calendar said that this is the preclosure issues.

MS. DEERING: Well, no, this is just all the meetings that are coming up, and one on July 9th on repository temperature, which is proposed. I don't believe that -- you know, I think it was a follow-up to a conference call that they had, and they are just kind of reaffirming these dates.

I don't know if they are engraved in stone yet. They agreed on five technical exchanges in the conference call, and I just wanted to bring them to Milt's attention so that he could consider them, because they are both probably interesting to him. Thanks.

DR. LYONS: Okay. Good.

DR. CAMPBELL: The only reason I interrupted, Lynn, and I am sorry, is that the Interactions Calendar says preclosure issues, 7/24 through 7/26. But it does say TBD and tentative dates.

MS. DEERING: I don't know. This memo is March 11 and so it may be out of date.

DR. CAMPBELL: Or it may be that they just have not settled on the times yet.

DR. LYONS: It is almost two weeks old now. Okay. On to the next page, and we keep moving through these follow-up items.

MEMBER LEVENSON: Excuse me, but it is the week of July 9th, and I am not available that week.

MS. DEERING: For the temperature -- okay.

DR. LYONS: The next page talks about possible working groups on above and beyond TSPA, and propagation of uncertainty, risks and applicability of the New Mexico environmental evaluation group process for Yucca Mountain, State and local public involvement. Do we have any more information on those?

DR. LARSON: Well, no, those were just things that we -- remember we were talking about the action plan and future things, and various committee members pitched in with what they thought might be interesting working group things, but we never picked any dates or topics, or finalized anything, and once again it is more or less a place holder for the committee to decide what they want to do, if anything, on these topics.

MEMBER LEVENSON: There is one more possible space holder, because we are sort of waiting for some feedback from the Commissioners, is the area of transportation.

DR. LYONS: Right. T here is a possible working group?

MEMBER LEVENSON: Right.

DR. CAMPBELL: Realistically, these are -- most of these are different aspects of the same issue, which is really how do you handle uncertainty in the context of doing a total system analysis, and if we want to develop a working group on that area, we are probably going to have to do it after the TSPAI technical exchange.

And so we are looking at -- and then it usually takes a number of months to develop the necessary invitations and find out who can attend, and put it all together.

So we are looking realistically at the fall and into the next fiscal year before we could have this kind of working group.

DR. LYONS: Okay. The rest of that talks about future activities, and really talks about what we are going to do about this meeting. I don't think we need to go through that.

What I would like to do then is turn to -- and again under Tab 2, to page 5, and look at the reports and letters scheduled for consideration during this meeting.

The first letter that we are going to look at is the entombment option for decommissioning nuclear powered reactors. We had discussed this at

the 122nd and the 124th meeting. We have a draft letter to look at. So we will be looking at that later on. The 2001 --

MEMBER LEVENSON: We do have the draft?

MR. SINGH: Yes, sir, we do.

DR. LARSON: Yes, Ray redid it based on the input that you have got in the plan, the draft plan.

DR. LYONS: Okay. The 2001 action plan, which discussed -- and which we approved in principle at the last meeting, we are going to finalize that later on today or actually this morning.

MR. MAJOR: This morning, yes.

DR. LYONS: We are going to work on that and talk about that a little bit more, and talk about our self-assessment. We were talking about a letter on high level waste chemistry.

But we are not really ready at this time to go forward with that, and so that will be something that we will deal with in the future. So don't worry about that one.

Partial site release of a reactor facility or site for unrestricted use. We are going to be hearing about that at this meeting. The staff is requesting a letter with any of our conclusions and

concerns, even if it is a brief letter.

DR. LARSON: Yes, they said even an e-mail, and I talked to them yesterday, and they would like something from the committee of some sort, and they will give you the timing that they have to get to the Commission this afternoon.

DR. LYONS: Yes.

DR. LARSON: And it is your first real presentation from NRR. So it would be an interesting discussion.

DR. LYONS: And then the last letter that we are going to consider -- no, there is two more. License termination plan, review the lessons learned that we got. The committee is going to give a briefing about that at this meeting, and we will have to determine whether or not we need a letter.

The staff right now is not requesting one. So we will see if as a result of that that we decide to write a letter. And then the final one is on the proposed revisions to 10 CFR Part 71, the packaging and transportation of radioactive material.

Again, we are going to hear about the proposed changes to Part 71, and the staff again is not requesting a letter from us at this time, but if we decide to, we could always write one.

Okay. Let's move on to future activities. Our plate is not that full in the next few months. We are looking at next month's meeting that the NMSS through the EDO has requested to brief us on the status of the sufficiency review, and an update on preclosure approach.

But of those are information briefings, and so those ought to be interesting. And on the page following there are some of the things that we were looking at adding, is more discussion on our vertical slice reports by the committee members and the staff.

And a response to the Commission briefing that is going to be held tomorrow if we have any, and if there is anything that we need to do there. And then I guess the other thing is to talk about the international high level waste conference in Las Vegas.

There was some discussion if there was a number of people going to that whether or not we would want to try and have a meeting there, rather than having a meeting here.

DR. LARSON: That was discussed at the last meeting whether the committee wanted to do that, but at that time you didn't have the agenda. But the agenda is now in your notebook, and you can look at

that.

And then one of the things that we have asked the staff in the meantime is the presentations that they scheduled for that meeting, and whether they would be able to give those in Las Vegas.

Now, there are papers being given by the staff in the center on the same topics, but I have not heard whether it is possible to do that, or whether the members want to do it.

But John there wanted that as an option, and several of the other members raised that possibility once they saw the agenda, which is in your book.

DR. LYONS: So we can talk about that some more. For June, we don't have any topics right now other than we have to do an election of officers.

DR. LARSON: I got two topics this morning, Jim --

DR. LYONS: You do? Good.

DR. LARSON: -- from the staff at 7:30. One is that Janet Kocher would like to come in and talk to us on public outreach activities, and it is an information briefing.

And, of course, this is a topic that the committee has indicated a lot of interest in over the

years. And the second one was a discussion of the integrated issue resolution status report, and that is another information briefing with medium priority.

And so they have indicated that they want to come in and talk about those two topics at the June meeting.

DR. LYONS: Good, because we are having our coordination meeting next week with EDO, and so we will have -- and I am sure that these two will be picked up there and we will look at some more.

DR. LARSON: Yes.

DR. LYONS: And then I am looking forward to July, and that we probably need to start making some preparations for our meeting in October in the Las Vegas area, in the vicinity of the Yucca Mountain site.

DR. LARSON: It may seem early, but you have no meeting in September. So if you talk about it in July, you can finalize it in August, and then that's it, and then you are there.

DR. LYONS: Yes.

DR. LARSON: And so that is the only reason I put it on there for July.

DR. CAMPBELL: One additional -- I'm sorry, Milt, go ahead.

MEMBER LEVENSON: I was just going to say should this have been an item on the copy for John to bring up with the Commissioners?

DR. LYONS: Oh, yes, whether or not they wanted a meeting held out there?

MEMBER LEVENSON: Yes.

DR. LYONS: That might be -- I am trying to think. I think that is something that he has raised to them, and that they are thinking about.

DR. LARSON: Well, you put it in a letter. We got a response back from the EDO who said it was up to the Commission.

MEMBER LEVENSON: I know that, and so the preliminary feedback was that it made sense, and that we are thinking about it or forget it.

DR. LYONS: Okay.

DR. CAMPBELL: I was going to add that there is an additional potential topic. I got a call from Rick Hulse at INEL over the greater than Class C waste issue.

DOE, under the Low Level Waste Policy Act, as amended, is responsible for developing a strategy for disposing of greater than Class C waste.

They also have a whole bunch of sealed sources that are being returned to them from

commercial entities, and they are trying to develop a plan of what to do with this stuff.

They are looking at disposal options in deep bore holes. But any facility that they develop, since these are commercial sources, would require an NRC license.

So it would be a DOE facility under an NRC license. So at some point they are going to be wanting to talk to ACNW and give a presentation on the various options that they are considering. So that is a possible topic in the next six months or so.

DR. LYONS: Okay. I was going to say I was wondering what the time frame was.

MEMBER LEVENSON: Andy, let me ask you a question since that becomes technically complicated or just policy and politics, that it seemed to me that if the Commission is going to go ahead with the can and canister program, and that is a good safe way of getting rid of kernels from bombs, and you have got the facility and the program to just throw these, certainly any of these commercial sources are much less an environmental threat than a couple of pounds of plutonium.

You have got a facility and you have got a program, and it seems like a relatively simple way

to handle it rather than starting a whole new major thing.

DR. CAMPBELL: Well, they are looking at options right now, and that's --

MEMBER LEVENSON: I guess the question really comes back to a philosophical one, and that is while these are licensed sources, and a lot of them are made by the Commission -- radium material come from our energy facilities, et cetera -- can you de-license a source like you can de-license a reactor, which would allow DOE to just use them in one of their existing unlicensed facilities, like the can and canister? That would simplify the hell out of things if it is possible.

DR. CAMPBELL: That would be a good question to ask them if they came in. I can't give you an answer on that. He did indicate to me that they see the disposition of the sources as a segaway into the larger issue of the disposition of greater than Class C waste in general, which they are also responsible for, and which also requires an NRC licensed facility.

MEMBER LEVENSON: I know that is the approach that they are talking about, but it doesn't seem to make sense to me, because generally the

greater than Class C waste is voluminous, and unconfined, unpackaged, et cetera.

There is one sort of risk family, and a sealed source that is small, and sealed, and packaged, and directly handable, and a relatively small volume, as compared to greater than Class C. That really ought to be a basis for trying to at least thing about it differently.

DR. CAMPBELL: Apparently they tried to extract useful radioisotopes out of these sealed sources and failed, and ended up with more waste than what they started with.

MEMBER LEVENSON: Sure.

DR. CAMPBELL: They are not just cesium and strontium. There are neutron sources which have actoncites in them, you know. And there are thousands of them. It is not a small number.

MEMBER LEVENSON: They are all small, but greater than the Class C, it is very small.

DR. CAMPBELL: Right. What is happening apparently is because they are small, they tend to get left and abandoned. They are finding them in -- you know, they are used in bore hold logging and stuff like that, and they end up getting left and abandoned.

So they are trying to gather them all in

at this point, but that's a collection issue rather than a disposal issue.

MEMBER LEVENSON: They are still finding radium in the free world from World War II days and in old medical buildings and stuff.

DR. CAMPBELL: Well, I can follow up with Rick at some point in time to see when it might fit into your schedule.

MEMBER LEVENSON: Well, I was at Hanford a few weeks ago, and I was absolutely appalled to discover that they are thinking -- you know, they have got all of this cesium and strontium sources from when then had a packing program, and they are now building a facility to dispose of the cesium and the strontium that is in the waste tanks.

And they are thinking about breaking open all those capsules and redissolving it, and dumping it into the tanks so that it can go through the processing plant so that they can condense it to a finite volume when it is already in a finite volume. So it is not our role to introduce rationality to the world, but we can try, I guess.

DR. LYONS: Okay. The next thing on the agenda here is to look at the reconciliation of responses to ACNW reports.

MEMBER LEVENSON: Oh, one other thing.

DR. LYONS: Go ahead.

MEMBER LEVENSON: The sidebar to the visit to Envirotech in fact is tied to this item at the July meeting, I think, was that if we had a meeting out in Las Vegas and the whole ACNW is out there, would people be interested in a side trip to Envirotech.

DR. LYONS: Okay. The next thing on the agenda is reconciliation, and I was wondering -- we were just talking about this, and whether we should wait until there was more members and everybody is here to go through those.

So let's table that for now, and then if you go through the rest of the information that is in your notebook, we have the proposed agenda for ACRS and ACNW meetings that we get from the executive director for operations that lists the items that we had provided already.

The ACNW stuff actually starts on page 20, the handwritten 20 at the bottom of your page. Again, we are having a meeting with them next week, and we will have an updated list at that time to work with.

And we used this to develop our calendars and our schedules for future meetings. And we have picked up on all of these that are in here now.

Then also there is the calendar for the ACNW and ACRS that follows that, and that is just really for your information. And then a list of M&O meetings status, and that is from March 5th, and I guess some of these other documents that we have help update that list.

MEMBER LEVENSON: Let me ask you a question about the transportation workshop, and that kind of drifted into being, and with Part 71 coming up as a more substantive part of our agenda along the way, would that have any impact on the value or probability that we should hold a workshop?

Originally there wasn't any official thing on our agenda that was justification for the workshop. It was a feeling that some of the committee members that transportation was a drifting item; and now with Part 71, there is a place to anchor.

DR. LARSON: And as you know, the Part 71 thing is a pretty finite discussion.

MEMBER LEVENSON: Oh, yes.

DR. LARSON: Dick, there is something that is being drafted to go in the self-assessment and operating plan that mentions transportation.

MR. DURAISWAMY: It is already in the action plan.

MR. MAJOR: We did move transportation from a first tier issue last year to a second tier year this year. I think the original topic arose when we were looking at the draft environment impact statement for Yucca Mountain, and that seemed to be something that was of high concern to the public.

And we kind of picked up on that following that. My impression right now is that we are taking on a lot of transportation issues, but we are taking them on piece by piece, rather than in one fell swoop. So that seems to be the course that we are taking.

DR. LYONS: Okay. And I guess what I was saying is that the rest of this, beyond the calendars and the meeting status -- well, are there any of these meetings that we should highlight? I think we already discussed them.

MS. DEERING: Jim, the calendar isn't complete. Are you concerned about that?

DR. LYONS: Well, yeah. In what way?

MS. DEERING: Well, just a couple of things come to mind. I see right away that there is an NWTRB on April 13th, a panel meeting in D.C. on multiple lines of evidence, which I think is a really important meeting. Somebody needs to go.

I know that Milt says he couldn't go, but

I think we should tap the other members and see if they could attend that since that is such a key issue and it concerns -- we have our own opinions on that, John Garrick does.

And there is another TRB meeting here in D.C. on May 8th and 9th, which I don't think I see on here.

DR. LARSON: We have to tell Sherry. I mean, Sherry only puts in there what we tell her to do, and of course the KTI meetings and the tech exchanges, and other things, are pretty dynamic in their dates.

MS. DEERING: And then there is another one in September, the 11th and 12th, and that should be noted on here. I mean, I will give this to Sherry.

DR. LYONS: Okay.

MS. DEERING: But for planning purposes, some of these are coming up pretty fast.

DR. LYONS: Are they on this M&O status, or are these separate?

MEMBER LEVENSON: What date is the April meeting?

MS. DEERING: The April meeting is on the 13th, Milt.

DR. LARSON: Friday the 13th?

MS. DEERING: I don't think you can go. I think you already checked.

DR. LYONS: Yes, I don't see that on here. The one in April, what was that?

MS. DEERING: What was it, the title of it?

DR. LYONS: Yes.

MS. DEERING: Multiple Lines of Evidence. The board wants to explore further as I understand it what they themselves mean by that when they ask DOE to make sure that they are looking at multiple lines of evidence. And I don't have an agenda for this, but I got this from their website.

DR. LYONS: All right. I think that is something that we should start trying to see who we want to send to those. I would like to go to one of these meetings and so on April 13th, if that fits in with anything else in my calendar, I wouldn't mind going to that.

MS. DEERING: I highly recommend it.

DR. LYONS: Somebody can go with me and explain the process and lead me through it.

MS. DEERING: Of course, you know what? Just for your information, that would be a panel meeting, which is different than their full committee

meeting. But I am sure that it would still be extremely well attended. But they just break off a piece of the larger group and explore.

DR. LYONS: Right. Okay. Maybe we should raise those meetings up to the others when they come back. And then the other thing we have here is the agenda for the international high level waste management conference, and so you can look at that, Milt.

And that gets up through this, and so what I would propose at this point is to take a break until John, John, and Ray come back. So let's take a break until 9:45. I would hope that they would be back by them.

(Whereupon, the meeting recessed at 9:31 a.m. and was reconvened at 10:21 a.m. in progress.)

MEMBER WYMER: All right. The coupling is between the dripping in of the water out of the waste package, which is one process, and radiolysis, which is another. That is an example, Milt.

CHAIRMAN GARRICK: Are secondary products an example?

MEMBER WYMER: Yes, but that wouldn't be a surprise since everybody has anticipated that, but they have not really anticipated the effect of high

acidity. People have mentioned it, but they haven't really dealt with it. But it was specifically mentioned.

CHAIRMAN GARRICK: Well, I am thinking of secondary products in the context of inhibiting corrosion, for example.

MEMBER WYMER: No, not really. People haven't, for example, thought about what might happen when the grout around the rock bolts dissolves, and then drips down on the waste package, and then resolidifies into a coating that might then prevent future corrosion and cracks, and something like that.

These are plucked out of the air, I want you to know, but they are still the kinds of things that might be surprises. That kind of stuff.

CHAIRMAN GARRICK: We can come back to that again when we do our Commission work.

MEMBER LEVENSON: In this example, you reduce the mobility of the neptium, right?

MEMBER WYMER: Yes.

MEMBER LEVENSON: Pleasant surprise.

MEMBER WYMER: It is a pleasant surprise. Not all surprises are bad. I think that is your point of several meetings ago, Milt.

MEMBER LEVENSON: Yes.

CHAIRMAN GARRICK: Now, there may be some colloid formation surprises that would go in the other direction.

MEMBER WYMER: Well, that is another issue, but something about colloids that bother me is that people only seem to be talking about pseudo colloids these days, and they have forgotten about real colloids. They are talking about attachment to silica colloids, and things like that, clays, and I don't hear much discussion anymore for some reason about the fact that the aconites form real true colloids all by themselves without attaching to anything.

CHAIRMAN GARRICK: Okay.

DR. LYONS: That's all that we have for the reconciliation, and that really wraps up all the planning procedures, and so I am going to turn it back over to you for the next item on the agenda.

CHAIRMAN GARRICK: Okay. All right. I guess we are going to receive an update on the current status of KTIs, the KTI resolution. Carol, we know you, but would you for the record introduce yourself.

DR. LARSON: You might notice on the agenda, and I think other than Carol, that at the last meeting the members were concerned that they weren't

getting enough time for discussion.

So we have indicated on the agenda that the presentation is supposed to be so long, and then the questions are afterwards, and it depends on how you interact with the speakers, so that you get an adequate amount of time to ask questions and interacting in the presentation doesn't take up all the time.

MS. HANLON: Good morning. I am Carol Hanlon with the Department of Energy, Yucca Mountain. Up until recently, I have been responsible for the KTI meetings. I have been facilitating those. I have recently transferred back into the site recommendation realm, where I am the product to lead for the site recommendation.

But I want to give you an update -- one of the highest levels, a very high level -- of the progress that we have made and basically what has been going on in this key technical issue, key technical exchange, which we feel have been very, very valuable.

Basically, we could easily just read along in our handout. There is not a lot of new material here. So, 11 out of approximately 13 technical exchanges are complete, beginning with the total system performance assessment and integration meeting

that we had last year, last June, in San Antonio.

And going through the most recent meeting, which was repository design and thermal mechanical effects, in February, the first week in February, in Las Vegas, we mentioned earlier this morning that tentatively we have two more meetings planned.

And actually the key technical issue meeting is total system performance integration. As we mentioned earlier, that is at the end of June, and in order to plan for that, and to facilitate that meeting and make it more effective, there will also be a features events and processes meeting held in May.

And there is talk of a preclosure issues meeting to be held later, and we are waiting for some planning information on that, and as to exactly how we will focus that. The preclosure issue, of course, does not have a key technical issue associated with that. So it falls into a different category

It is rather a different type of situation than with the other key technical issues which do have the issue resolution status report, and how to identify issues and sub-issues, and therefore can be addressed specifically.

CHAIRMAN GARRICK: Do you have specific dates yet on the TSPA meeting in June?

MS. HANLON: I think that the date -- when I left the office the date had not been set. I understand that it has tentatively been set or perhaps more firmly than that for June 25th through 29th. Is that correct, Jim?

We have several people from the staff who are very familiar with these, and they can correct me whenever I stray. I have put in the package the issue progress sheet, and you can look at it more closely as I think you go through this.

Five of its sub-issues are totally closed, and five of the sub-issues are open. There are 27 sub-issues that are closed-pending. We have approximately 215 agreements for the nine issues so far.

Some of those are multiple. They address more than one item. So we have captured them more than once for completeness, but there are actually not that many unique agreements. And to date we have submitted to the NRC 56 documents which address 45 of these agreements.

We have put every effort into very carefully meeting our commitments, our agreement items, to make sure that with the agreement items and the dates that we have committed that we keep those.

We feel that that is very, very important. There are occasions where we have fallen behind a bit, and so I am just going to call these to your attention. One of the ones that I think is almost out is this features events and processes analysis report for the unsaturated zone.

Another is the feature event and processes database, which is in DOE's hands. We are reviewing it and we will make final changes and get that to the Nuclear Regulatory Commission staff, I hope, still in March.

A couple of others are the summary of in-package chemistry for waste forms, preliminary assessment of radiolysis affects from criticality and in-package chemistry abstractions. So those are forthcoming.

MEMBER WYMER: What is radiolysis affects from criticality? Who is going to worry about radiolysis?

MS. HANLON: You know, I would have to look into that. Katherine Napp hasn't joined us yet, and she may be here later, and she can say a bit more about that.

It is one of the things that came out of the container life and source term agreements, and I

can also look that up, that specific agreement, Dr. Wymer, so that we have a little more information on that.

MEMBER WYMER: I would be interested to see what that really means.

MS. HANLON: Sometimes we lose a little bit when we summarize. So I am not going to go over the next several slides for you as basically those are just summarizing by the key technical issues, but we will put it up briefly.

The number of sub-issues which are closed, and which are closed-pending, and which are still open, and you can see that we are making quite a bit of progress. But to get us back on track, I really won't go over those.

The total system performance assessment and integration meeting is in June, and all four of those sub-issues remain open. So they will be addressed at that time, and that is really appropriate, I believe, because it is dependent on information that is going on to date, and also it depends upon future events and processes discussion.

I have also put by each key technical issue a status of items the sub-issues which are closed and closed-pending, or in some few cases open,

and again I won't go through those in the interest of time.

Since last we spoke, we have had four meetings. We have had the radionuclide and transport meeting, the thermal effects on flow, near-field environment, and the repository design, and thermal mechanical effects.

So it may be worthwhile just going through those briefly. With radionuclide and transport, there were four issues. Sub-issue 1 was closed-pending, with five agreements. Sub-issue 2 was closed pending, with 11 agreements; and we have identified the duplicate agreement from radionuclide transport.

And Sub-issue 3 is closed-pending, with 10 agreements; and Sub-issue 4 is also closed-pending, with 3 agreements.

Thermal effects on flow had two sub-issues, and closed-pending for Sub-issue 1, with two agreements; and Sub-issue 2 is closed-pending with 13 agreements.

Evolution of near-field environment. All five sub-issues are closed, with the associated number of agreements, and we have again listed the duplicates.

Repository design and thermal mechanical

effects, and the last meeting which was conducted in February has four sub-issues. Sub-issue 1 and 4 are closed, and Sub-issue 2 and 3 are closed-pending, with the number of agreements; two for Sub-issue 2 and 21 for Sub-issue 3. And it specifies quite specifically the types of analysis that we need to do to close that.

And so the Department feels that these technical exchanges have been extremely productive and that we have made progress in moving forward. We of course understand that the staff will continue to apply a great deal of scrutiny and evaluate the information that is forthcoming.

We appreciate that and that agreements may be revisited. The strong point that we see here is that we have defined information that the staff continues to be interested in, and that they feel is important to see as we move forward.

So we continue to work to completely satisfy those agreements. And I would note that there is a peer review that has been started. I think that this is an item of interest to Dr. Wymer and others on the committee on the waste package acromion issue.

Dr. Joe Payer (phonetic) has been identified as chairman of that sub-group, and that

other peer review group members will be identified soon, and when we have a schedule and an opening meeting for that, you will be notified of that. We invite you to participate if you would like to.

We hope to have the interim report on that before the end of the calendar year. And in terms of being able to close out any of the key technical issues, we are still hopeful that we may be able to make -- I know that both the staff and we have interests in being able to totally close out some of the key technical issues.

And we are hopeful that it may be possible to close the key technical issue on igneous activity, and perhaps a structural deformation and seismicity, and we are working through that to see what kind of informational meetings that we need to have to be able to move forward and close those items.

One other thing that I have that may be useful to you is that we have developed a matrix that takes the items -- I will make copies of this if it will be useful to you, that takes the agreement items and goes through them by date of the agreement, and then correlates that with a number of the other -- excuse me, the specific key technical issues that they address.

I had mentioned earlier that we have a number of issues that address more -- a number of agreement items that address more than one issue, and so we have attempted to make that a little clearer by doing this interim chart, and it goes through month to month, and so that will also allow you to see the scheduled date for things that are out in front.

CHAIRMAN GARRICK: I think that would be very helpful.

MS. HANLON: So I will make sure that you get copies of this.

DR. LYONS: I think we passed out copies of those to you.

MS. HANLON: Are there any questions?

CHAIRMAN GARRICK: Is this gentleman going to lead the corrosion the same one that was involved in the TSPA peer review?

MS. HANLON: Joe Payor. You know, I am not so sure. I think he has been in our program, but I couldn't say that for sure.

DR. CAMPBELL: Yes. He was also one of our panelists in the engineer barrier working group in '98. Joe Payor.

CHAIRMAN GARRICK: Okay. Joe Payor. Yes. Very good. Any questions?

MEMBER LEVENSON: Carol, at the KTI meeting on repository design, as I wasn't there, but it was reported -- and I will read you the statement. "DOE stated that the project design goal for preclosure emplacement is a wall temperature of 96 degrees, below boiling." Is that a decision that has actually been made?

MS. HANLON: I think right now currently we are looking at a range of that, and Dr. Hanner may want to add to this, but we are looking for a range between the cooler temperatures and the warmer temperatures.

MEMBER LEVENSON: Well, as it relates to KTI, the question is that if you make -- and that is a somewhat significant change. Is it in your plans or programs to go back and review all of the sub-issues, because some of them will probably no longer be relevant, and somebody shouldn't necessarily invest a lot of effort and time generating information to respond.

And conversely the whole series of new sub-issues that become important. How does that get handled with major changes?

MEMBER WYMER: Actually, I can answer that. At the Waste Management 2001 meeting a couple

of weeks ago, a statement was made that it will not be a complete redo with the low temperature, but it will just be a fix on the high temperature case. They are going to go in and patch and fill.

MEMBER LEVENSON: Well, it's not that simple.

MS. HANLON: Actually, I would prefer to say that we are looking at whole range of temperatures from the current repository reference design that we are using, and down to a cooler, and the range is in between.

So we will be looking at a range, and one of the things that we are doing is sensitivity studies, which will come out later this summer, that address that range.

So the information and the documentation that we are putting together will look at that range of temperature. And I think that Mr. Levenson's question was how does that relate to the issues and sub-issues, and the key technical issues that we have looked at.

And I know that the staff has been very interested on the range of temperatures that we are looking at, and what that variation will do. We are also interested in that, and basically after we finish

these sensitivity studies, what we would propose is a discussion with them to discuss what the range is, and information that we see coming out of that and what effect we have.

And I am sure that the NRC staff will be looking very closely and will have questions of their own.

CHAIRMAN GARRICK: Carol, when you look at this, and you evaluate it at the sub-issue level, and you put your score card on it of the ones that are closed, and closed-pending, and so forth, one can be encouraged by the progress that has been made.

But we also know that these issues are not all equally important. Some of them are at the sub-issue level, and some of them are 10 times, or maybe a hundred times more complex or more difficult than the other.

Has anybody thought ahead enough to know what the real binding issues are going to be? You know, you suspect that there is going to be an isotope that we get to what looks like total resolution pretty quickly.

But that the last few are really going to determine the amount of resources that will have to be allocated to deal with them, and will probably drive

the schedule.

Has anybody thought about it enough to identify what they consider to be the over-arching sub-issues, in terms of getting resolution?

MS. HANLON: Well, Dr. Garrick, I think there are a couple of answers to that, and one is that we have tried previously on repository safety strategy to identify those things that we think are most important.

And therefore to prioritize our work, and to prioritize our emphasis. Previous to that we had done a similar thing as you recall in the viability assessment, where we had gone over the other principal factors and identified which ones that we felt had the greatest significance, and therefore, needed the same attention.

And that has been carried forward into the TSPA that we currently have and will be continued to be reevaluated in the sensitivity assessments ongoing.

But I think another thing is the features, events, and processes assessment that we have ongoing, and I believe that is why the staff is placing the amount of emphasis they are on features, events, and processes, so we can go through those, and they can fully understand how we have considered them, and how

we have excluded them, included them, and treated them, including secondary processes, so that they can be sure that we are putting our emphasis where they believe it should be.

And following that meeting, it will carry forward into the total system performance integration. So I believe that is how we are trying to identify the most important of these issues.

CHAIRMAN GARRICK: For example, one of the sub-issues that the TSPA is going to be the scenarios. Do you envision that the features, events, and processes activity is going to provide the source material necessary to deal with that particular issue?

That is, the structuring of the details of the scenarios? That is one of the four sub-issues.

MS. HANLON: Well, the FEPs are intended to look at that, as well as the analysis and modeling reports, and the PMRs are intended to set up the scenarios based on the FEPs and how they are derived.

CHAIRMAN GARRICK: Yes. I think the more that we could telegraph what we consider to be the most important things that are yet to be resolved, the better we will be in a position to address them, and allocate our own resources.

MS. HANLON: I know that has been a

concern of yours previously on many occasions, and it came up earlier this morning, and I made sure I took a note of that.

And I will be speaking with Bob Andrews when I go back, and perhaps you would like a presentation later on, perhaps this summer, in which we make that a bit more clearer for you.

CHAIRMAN GARRICK: Yes. The Committee is trying to come to grips with this whole issue through a vertical slice process, and you would like to maximize the benefit of what you choose as a vertical slice.

And whatever additional insight we can get from the DOE and the NRC staff as to the most important issues might influence what we would focus on in attempting to get a better indication of the readiness if you wish of the NRC to actually process the license application.

So we really are looking for what are considered to be the most important issues, and trying not to get lost in the large number of issues that exist, and be more focused on what the TSPA is telling us is really the drivers here.

MS. HANLON: Great, and understand that we would be very interested in doing that for you. Up

until June, that time frame is going to be very, very busy with completing these analyses.

But in the July-August time frame, if that worked for you, I think we can make speakers available.

CHAIRMAN GARRICK: Okay. Thank you. Questions? Milt?

MEMBER LEVENSON: No, thanks.

CHAIRMAN GARRICK: Staff?

DR. LARSON: There is no SRCR anymore, right?

MS. HANLON: There is not.

DR. LARSON: And so what is taking its place? Wasn't there supposed to be some kind of engineering report out last week?

MS. HANLON: It is a science and engineering report, and it is looking as if that will be available at the end of April now, in that time frame.

And basically that is what -- it is the requirements out of the Nuclear Waste Policy Act, Section 114, I think it is, Sections A, B, and C, for a waste form, waste package, repository design, site characterization depth and analysis.

So that document is coming together, and

we hope that it will be released in the April time frame, and the rest of our schedule is evolving a bit.

We hope to have the site recommendations still available this calendar year, but as soon as that schedule becomes more tied down, Howard, I will be happy to brief you on that also.

DR. LARSON: Okay. Thank you.

CHAIRMAN GARRICK: Any other questions

(No audible response.)

CHAIRMAN GARRICK: Thank you very much.

(Whereupon, meeting recessed at 10:47 a.m.)

A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

(1:03 p.m.)

MEMBER WYMER: All right. This afternoon, we are going to hear an interesting -- or interesting to me anyway -- report on Partial Site Release. I don't know who is going to start off.

CHAIRMAN GARRICK: Mike Ripley.

MEMBER WYMER: There are a lot of interesting and somewhat difficult issues, and I think we will be interested to hear what you have to say, please.

MR. RIPLEY: Great. I appreciate the opportunity.

CHAIRMAN GARRICK: Ray is going to lead our discussion on this. This happens to be one of his topics. So he will be pushing us all to get involved. So, carry on.

MR. RIPLEY: Good afternoon. My name is Mike Ripley, and this is my colleague, Paul Harris. Both of us came out of the Division of Licensing Projects, and we are both project managers in the decommissioning section.

As many of you may know, that section was essentially dissolved, and some of us stayed behind on projects and others moved over to the rule making

group.

I have been on the rule making for partial site release since the middle of last year, and come May, I will be returning back to a project management assignment, and I will be turning over partial site release to Paul.

So probably after about the middle of May, Paul Harris will be your prime contact if there is any questions on partial site release. I am going to brief you pretty much on the background, and a lot on the rule itself.

And then I will finish up with 2 or 3 items that came up during our concurrence reviews that causes to make some non-editorial changes to the rule making, and so that you are aware of those, and bridge the gap if you had an opportunity to look at the package that was distributed a month or so ago.

And I think it will also be appropriate if I gave you an indication of what I would like to see come out of this other than just a good transfer of information between you and I.

I would like to go away with any comments that you would have on the rule making that would help us maybe clarify things in the rule, or maybe things that we want to carry to the public and what not.

And hopefully I would like to receive back, preferably in writing, some kind of feedback that indicates that the committee doesn't have any objections to us proceeding ahead and publishing this proposed rule for public comment.

As I will indicate, our schedule right now has us a commitment to have this to the EDO for his approval prior to giving it to the Commission on the 1st, and we still have some significant concurrence reviews to go through between now and then.

What I would like to do, and my preference is, is that as I go, if there are any questions that anyone has or any comments, that we could field those as we go in real time rather than waiting until the end, although hopefully we will have some time at the end to wrap things up and talk about anything that you guys want to talk about.

I am prepared to talk in so many details in everything that I am going to go through fairly quickly. Again, stop me, but on the other side of the coin, if I get into too much detail, and more than you really want to hear, give me the old across the neck sign and I will move on.

So with that, with the next slide. First, as a definition, a partial site release means a

release of a part or a portion of a power reactor site for unrestricted use prior to NRC approval of the license termination plan.

The need for the partial site release rule making evolved out of our experience in dealing with the Oyster Creek site in late 1998 and 1999. Basically, in 1998, they submitted a license amendment application to revise their tech specs to delete a requirement in there that restricted them from selling a new part of their exclusion area, and they want to pull it out of their tech specs.

They, and many other of the older plants as they transition to the standardized tech specs, are removing such things as that, including site boundary descriptions from their technical specifications, and moving the rules in the FSAR.

It was, however, in response to some queries from the State of New Jersey on whether or not as it turned out Oyster Creek's plans to sell off a good portion of their site, some 600 acres.

And in our return correspondence to the State of New Jersey, uncovered the fact, if you will, that we really didn't have a process for handling partial site releases for Part 50 licensees.

And as a result of that, it wasn't clear

whether or not a licensee would need to come to the NRC for approval of a partial site release; and also as I indicated here, it wasn't clear if the radiological criteria for release of the property fell under the license termination release requirements, which are given in Part 20, Subpart E, which we will talk about.

So because of this regulatory gap, it was decided that it would be appropriate to do a generic rule making, and we submitted a rule making plan to the Commission in February of last year, and the Commission approved that rule making plan in their SRM issued in April of last year.

The generic schedule that we had, as indicated here, was to issue a proposed rule this year and a final rule next year. As part of the Commission's SRM or staff requirements manual, back to the staff in approving the rule making plan, they directed the staff to issue a generic communication to power reactor licensees indicating to them that a rule making was pending involving a partial site release.

And also described in somewhat specific terms what the process that they would use on a case-by-case basis to request and gain our approval for a partial site release.

And that generic communication as I indicated here was issued as an RIS, a regulatory issue summary, in October of last year. Next slide, Paul.

Our regulatory approach to partial site release is to narrowly focus the release on, one, unrestricted releases only; and only at power reactors, however, that would be both operating, as well as plants that are in the decommissioning phase.

Basically, the rule making adds a new section to 10 CFR 50, which provides the procedural guidance for licensees submitting information sufficient for us to be able to review and then approve a partial site release.

The first step in the process that a licensee undergoes would be to perform what is called a historical site assessment. A historical site assessment is a MARSSIM term.

It consists of a review of essentially plant records, and it may also consist of personnel interviews, to determine whether or not radioactive material has been deposited anywhere on the area to be released.

This historical site assessment has the purpose of classifying the proposed release area in

one of two classifications, again using MARSSIM terminology, as either an impacted area, which means that the area has some potential for residual radioactivity.

Or a non-impacted area, which means that there is no reasonable potential for residual radioactivity.

In the case of an impacted area, the licensee would be required to perform surveys adequate to demonstrate compliance with the radiological release criteria, which I will talk about in some detail in a minute.

On the other hand, if the area can be demonstrated to be non-impacted, then there are no radiological surveys required.

CHAIRMAN GARRICK: Now, what is the basis for deciding whether it is impacted or non-impacted?

MR. RIPLEY: Not impacted or impacted means whether or not there is a potential for residual radioactivity, and it is based on a records review, and a records search. Sometimes augmented by radiological surveys, but not necessarily.

MEMBER WYMER: Which is related to the use for which that part of the site has been put to?

MR. RIPLEY: Yes. Yes. The kinds of

things that are looked at are events such as spills that have occurred historically, and whether or not the area was ever used to store contaminated material.

And whether it was ever part of the RCA boundary, and whether or not it was in the downstream of an elevated release from the plant stack. Those kinds of things.

CHAIRMAN GARRICK: You are probably going to get to this, but does this open the way for a phase decommissioning process?

MR. RIPLEY: Well, this is in fact and could be termed a phase decommissioning process in respect of the fact that the essence of it is a partial license termination if you will.

I think that phase decommissioning process is a terminology that is used by the material sites, by the material licensees, where in their regulations Part 30, 40, 70, 72, there are provisions for a phased release such as this.

This is in so many words a Part 50 equivalent of that kind of thing, is the way that I would characterize it.

CHAIRMAN GARRICK: Well, it seems to me like a good idea, but what got me to thinking about it is that there aren't many situations quite like Oyster

Creek. They had very special circumstances as to why they wanted to pull that particular part of the site out.

MR. RIPLEY: I will give you some examples of --

CHAIRMAN GARRICK: So the question is, well, how many cases are there that are going to employ --

MR. RIPLEY: Well, I will talk about that. It is an emerging issue, and there are a number of sites who have requested information on the process that they need to go by.

Maine Yankee, in January, submitted a license and memory application for the sale of property that they were obligated to sell off as part of an agreement with their DPUC some 200 acres, I believe it is, and that they are going to donate rather than sell to an environmental organization.

So we are considering that, and Haddam Neck in Connecticut will be submitting a formal request for partial site release in the next month or two for an area that is currently their parking lot, and essentially in the middle of their site, which they are going to use -- which a developer is going to use to build a gas-fired -- a dual-unit, gas-fired

power plant.

And along with, by the way, a liquid natural gas storage facility. So that is coming at us as well. Limmerick has questioned that, and we are going to be meeting with Trojan at the end of the month.

They have already submitted their license termination plan and it has been approved by the Commission. However, they are now looking at selling a part of their property as well. I don't know if that answers your question or not.

CHAIRMAN GARRICK: Well, yes, but what I was thinking of -- and maybe this is off the track, but it would seem to me to be a good public process to be in a position to say that we have got this site with all this land and we are going to decommission it, but in the meantime we are going to release a lot of the land for unrestricted use.

Now, does this specifically allow this to happen, and wouldn't that be a good strategy on the part of applicants or licensees?

MR. RIPLEY: I think yes, yes. This is really put in place to provide the mechanisms for those who desire to do that, and obviously there is economic advantages, and there are public confidence

things as well that goes along with that, but I think you are right.

CHAIRMAN GARRICK: And most of these sites, you are probably in a position to -- and I don't know what the number is, but it is a large fraction. Maybe 80 percent of the land could come under this immediately.

MR. RIPLEY: Yes.

CHAIRMAN GARRICK: And that sounds like a very --

MR. RIPLEY: Well, what we envisioned, and what we expect to be the case will be those partial site release requests that have to do with parcels out at the edge of their site boundary.

Limmerick was talking about that they wanted the local regional sewer district wanted to build a small facility out in an area at the edge of their boundary.

CHAIRMAN GARRICK: Yes.

MR. RIPLEY: Probably the exception to the rule -- Haddam Neck is probably the exception to the rule, where they are releasing property right in the middle of their existing site.

MR. NELSON: I guess -- I'm Paul, and if I could be presumptuous here and assume that what you

are getting at is will this rule circumvent the license termination rule.

CHAIRMAN GARRICK: Right.

MR. NELSON: And the answer is, no, it won't. This rule is based upon the license termination rule, and when this comes to conclusion, and let's say a licensee opts to release a portion of the site, under this portion of the rule, the license termination rule upon that phase of their decommissioning, will envelope these areas which are released under partial site release.

So in the aggregate the site as licensed originally will be looked at for license termination. So the advantage to a licensee would be on a case-by-case basis, where they have a specific need to release a portion of the site for their own use.

But that doesn't preclude them from being looked at from the license termination umbrella.

MR. RIPLEY: That's exactly right, and that is part of the purpose of making this a formal -- well, part of the regulations, is to prevent those licensees who may feel that they can go ahead and do a partial site release without gaining NRC approval under 50-59, for instance.

CHAIRMAN GARRICK: I guess the impacted

area issue would address those situations where decontamination activities are on at a reactor, for example, could lead to some contamination of the nearby regions; is that part of the consideration?

MR. RIPLEY: Yes. That would also be looked at as well, especially when these decommissioning activities are going on at the site. We will talk a bit more about that in a while.

CHAIRMAN GARRICK: All right. Thank you.

MR. RIPLEY: The approval process for a partial site release, the mechanism, then depends on this area of classification, impacted versus not impacted, which I will show you right now.

Where the area cannot be demonstrated to be non-impacted, which is almost the same thing as saying an area that is classified as impacted, but using the MARSSIM approach and philosophy of you are guilty until proven innocent.

So you assume that it is impacted unless you can clearly demonstrate that it is not impacted, and so we are using this kind of wording. Where an area cannot be demonstrated to be non-impacted, the license must submit an application for amendment of his Part 50 license.

And that amendment application must

include the methods used and the results from those radiation surveys that he is obligated to perform to demonstrate compliance with the radiological release criteria for unrestricted use.

This is the same criteria that is used at license termination and is found in Part 20, Subpart E, which is 25 MILLIREM per year, and as reduced to as low as reasonably achievable or allowed.

He also needs to include the results of an evaluation of the impacts to reducing or changing his site boundary.

MEMBER WYMER: What kind of impacts are you talking about?

MR. RIPLEY: I will be talking about that. I have a slide devoted to that, but basically other kinds of things other than radiological things; impacts on security, and evacuation plans, the other limits and standards associated with public dose limits, et cetera.

And because a license amendment is involved, the licensee would be required to also provide a supplement to his environmental report describing any information based on any changes or impacts as a result of the partial site release.

In response to a licensee's amendment

application for a partial site release, the NRC will conduct confirmatory parallel sampling of surveys as warranted, and "as warranted" are the words that are used in the rule.

We have stated in a number of public meetings that it will be our policy to conduct confirmatory and parallel sampling in conjunction with those that would typically be expected to be done by the States as well.

In addition, prior to taking any action on a partial site release, we will complete any Subpart L or informal hearings that may be granted as a result of a partial site release amendment being challenged.

And based on a demonstrated compliance with the release criteria the NRC would then be able to approve the amendment application. Next slide.

Where the area can be demonstrated by the demonstrated by the licensee to be non-impacted. A license amendment is not required. A written request may be submitted for NRC approval.

What I am getting at here is that it allows for those licensees who wish to submit a license amendment application, even for the cases where they are not otherwise required to.

And where, for instance, the area is not

impacted. A case in point is Maine Yankee which I mentioned a few minutes ago. Maine Yankee has submitted a license amendment application for approval by the NRC to release a couple of hundred acres of land that is as they claim, and which is under review currently, is not impacted. So that was their choice.

And the Commission cannot take a posture of denying such a license amendment application as OGC has told us because we don't do that unless there is a safety reason for denying an amendment application.

The application itself needs to include again the results and evaluation of the impacts of a change in the site boundaries before, and includes a description of the facility, and a schedule for the release.

And in this case, because there is no amendment involved, they need to include an evaluation that demonstrates that the environmental impacts are bounded by previously submitted environmental impact statements. The next slide.

In response to a letter submittal for a partial site release, the NRC will determine whether the licensee's historical site assessment is adequate, and those will be primarily by regional inspections of the report itself, and the supporting data, records,

et cetera.

And provide the basis for the NRC agreeing with the conclusions of the historical site assessment. We will again conduct confirmatory surveys, or whatever surveys we deem is warranted.

And upon determining that the licensee has met the regulatory requirements, and that there is otherwise no other safety impacts as a result of their planned release will approve that release by letter.

For all partial site releases, and here I mean both the case where amendments are required, and an amendment is not required, the licensee would submit the results of their evaluation of the impacts of reducing a site boundary.

In most cases this will include some site specific kinds of things, depending upon their circumstances. However, the proposed rule includes five areas of review that are specifically specified or specifically required to be included in an evaluation, and I have listed those as you can see.

One, the public dose limits of Part 20, Subpart D, and these are the regulations involved with the dose limits to individual members of the public are not exceeded, and requires an evaluation of the

emergency planning or physical security as I mentioned.

And that the regulatory standards involved with gaseous and liquid effluent releases are not adversely impacted, and that their environmental program, ODCM, that may require revision is being addressed.

And then finally that the Part 100 siting criteria are still being met. Next slide, please.

Our rule making specifies that the license termination plan must consider all site areas controlled during the duration of the Part 50 license in order to demonstrate that the entire area meets the radiological release criteria.

In that regard, we are proposing to amend 50-82, which is the license termination portion of the regulations, to require that license termination plan to specifically include identification of any parts of the site that have been previously released.

As well as including in the documentation that demonstrates compliance with the release criteria for license termination, and consideration of the previously released areas of the site in ensuring that the release limits of 25 MR per year is reduced and met for the whole site.

In addition, at Part 20, Part 20 is being revised to bring into the scope of the criteria by which the NRC could require additional cleanup at a site, partial site releases.

This would be the case where new information may come forward following release that indicates that the results of the surveys and assessments that were done were in error and in fact the release criteria is exceeded and also specifies that it would be the case that there would be a significant impact on the health and safety of the public. Next slide.

Section 50-75 in 10 CFR already includes a number of specific records that must be maintained by licensees. These are records termed in the regulation as being important to decommissioning.

Our proposed rule making would require that some additional record keeping be established and maintained related to property line changes, and changes in site boundary, as well as the records related to the radiological conditions of portions of their site that have been released under the partial site release rule.

And it includes as I indicated there records of the site boundary as it was originally

licensed, and in addition any records of acquisition to the original site, including records of the use of any acquisitions outside of the original site boundary for handling license material.

And finally records of the disposition or the release of any areas of the site, including the records that support the submittals to the NRC per the requirements of our partial site release rule.

The purpose of this record keeping is to ensure that the dose contributions of these partial site released areas can be adequately accounted for at the time of a subsequent partial site release, and at the time of license determination when the balance of the site is released for use.

Our proposed rule specifically provides for public involvement in that, and that the NRC will notice the licensee's request letter or licensee amendment application as applicable, and make it available for public comment.

We will also hold at least a public meeting, if not more public meetings, in the vicinity of the site prior to taking any action relative to approval of a partial site release request.

And that would be the case regardless of whether it was a letter or an amendment, and again

which means regardless of the potential for residual radioactivity.

And we have already held several workshops and public meetings where a partial site release was discussed with both members of the public, as well as licensees. Most recently in November of last year at the NEI licensing forum, and a few days later at the NMSS decommissioning workshop.

As part of our rule making effort we plan on holding probably two more workshops, one in the west and one in the east, to give an opportunity for public dialogue and comment. We probably plan on doing that in the summer to fall time frame of this year.

Finally, a note that 10 CFR, Part 2, would be revised by this rule making to bring into the scope of the informal Subpart L hearing procedures amendments for partial site release that may be successfully challenged and require a hearing.

I note here in the bottom bullet that we recognize that the Commission has just recently approved with comment a substantial proposed rule modifying Part 2, which would include expanding the informal hearing procedures to include amendments such as partial site releases.

So if this ruling then becomes final, there would be no need for a partial site release rule making to amend Part 2. So we are telling the Commission that we will continue to monitor the status of that rule making and delete our proposed changes to Part 2 as appropriate. The last slide.

As I indicated, our rule making has been in office concurrence since the middle of January, and since that time we have incorporated several significant changes that I would like to discuss briefly with you, which were not, I don't believe, reflected in the package that you were given.

These are late breaking changes if you will. One, we have eliminated distinguishability from background as a release criteria. In the initial rule making plan, and in our initially distributed proposed rule package, we offered two cases where a licensee could receive NRC approval for a partial site release by amendment, as opposed to letter approval.

The first case is if the area is not impacted, which I have already talked about and remains a criteria. The other is that a letter approval would be permissible if the licensee could for impacted areas that had been remediated to some low level of radioactivity, but still is impacted, if

he could demonstrate that the remaining residual radioactivity is not distinguishable from background.

Now, the comments that came to us in regard to that was that we needed to provide a little more detail on the technical basis for that criteria, as well as what he licensing guidance would be -- you know, which new reg he would go to, for instance, to find out how to make that determination that the residual radioactivity was distinguishable from background.

In response to some comments and discussions that we held with the Office of Research, their technical people concluded -- and I see Mr. George Powers back there.

We also spoke with Dr. Carl Gogalak, who some of you may know is with DOE and whose office is in New York City, and was primarily involved with the statistical analysis involved with releases.

And they recommended to us that we not use distinguishability from background as a criteria unless we could also provide an indication of how closely a licensee needed to look at to what degree it was differentially different than from the background radiation.

The thrust of that is that it would

require us to specify a number, a quantity, a minimum amount of either -- in terms of concentration or dose by which it did differ from background.

And the problem there is, and as would seem obvious I guess to us now at the time now as we speak about it, is that such a minimum number really -- although it has been batted around about a small fraction of the release limit, or one MR per year or something like that, there is not currently endorsed number.

And therefore as a result of that, there is no existing technical basis for using that as a criteria and so we deleted it. What this means is that those licenses who would otherwise have been able to gain NRC approval of an impacted, yet remediated area, by letter approval would now -- those folks would require the same process, and would require a license amendment as those who would otherwise would have activity well above background, but less than the release criteria.

The other thing we did was in the original rule making plan we had words in there for the amendment case that the licensee needed to submit his plan for demonstrating how he was going to comply with the radiological release criteria.

This kind of wording really comes from the license termination plan, where in fact it is a plan that is submitted to the NRC for approval for license amendment, and in the case of a license termination plan, at least two years prior to their proposed date of license termination.

In this case, we are looking for the evidence that demonstrates that they meet the criteria, as opposed to a plan. However, we have added words to the statements of consideration noting to licensees, and in fact they certainly already know this, that it will be to their benefit to review their survey designs and their survey plans with the NRC prior to performing those surveys.

Lastly, we will incorporate -- we have not yet received it yet as it is in the concurrence process -- NMSS's review of interactive or so-called synergistic dose effects.

Back during the drafting of our original rule making plan, NMSS and others, I believe, raised a concern that there may be what was termed at the time as a synergistic effect between partial site releases or between a partial site release and the balance of the site as it is released at license termination.

Synergism would imply a multiplicity of dose if you will, where you would get more and end up with a higher dose if you will than the sum of the parts.

And that would probably violate the laws of physics and that's why synergism is not a good term. So we are not using interactive, I believe, is the operative word.

And interactive to the extent that -- and just to give you a rough example, and there are others here in the room that can provide more depth if we need to talk about it.

But if I release Parcel A today, and maybe it was a small area, and if you look in the MARSSIM guidance, the survey area that is assumed for the resident former scenario, which is a scenario assumed, is 2,400 square meters.

Well, if there is less than that, and he didn't use that whole area, but then Parcel B next year is released, and so now he can now take his 2,400 square meters and move it around if you will, his residence, the well that he drinks water from, and now possibly the crops that he would probably be eating, could now extend over what was originally his boundary at the time of the initial part site release.

And the conditions over there may be that there is some radionuclides that didn't exist in Parcel A over in Parcel B, such that now due to his lifestyle scenario that is described in the dose modeling assumptions, would cause him them to receive a higher dose than was assumed at the time of the release of Parcel A.

This is a hard one. The thrust of NMSS's work was to respond to specific questions that the Commission raised in their SRM, and they have done that, that related to this dose impact, as well as identifying what the guidance needs to be for the licensees to be able to assess those contributions both from the balance of the site on the partial site release, as well as the dose contributions from the partial site release on subsequent releases or the balance of the site, it would go either way.

The primary benefit of this guidance will be to allow licensees when they do partial site release, number one, let's say, to be able to look forward based on this guidance to what the impact could be down the road when they go to release another part of the site or the balance of the site.

So they can make intelligent decisions on the degree of remediation that they think they might

want to do if it is an impacted area in both Parcel A, if you will, and the other releases. I hope that you follow that.

So this guidance is currently being developed and will be done in the June time frame of this year, and then incorporated into the appropriate guidance document in NMSS, which we think will probably be there in the NMSS standard review plan.

And that will ultimately be the case, and what they are planning on doing now is issuing what is called a staff position document that will provide that guidance in the interim before the new reg is finally revised.

The Commission, by the way, when they approved our rule making plan, were notified that the expectation was that this guidance would probably be factored into the rule making at the time of the final rule making.

So we don't intend to discuss this in any depth in our proposed rule because it is still somewhat preliminary and the guidance has not yet been drafted.

However, we will take the attachments that describe the guidance process in general terms, as well as the specific responses, to the Commission's

questions in the proposed rule. Like I said, it is not in there yet.

And that is pretty much the significant changes that were made, and I guess that pretty much concludes my prepared slides, and I would be happy to answer any questions.

CHAIRMAN GARRICK: Thank you very much.

MEMBER WYMER: I have some comments and questions, or observations. You wanted the ACNW to tell you whether or not you had responded adequately and completely to the issues.

You have responded, but there are still a number of pending things to be done, like this new Reg 70-27 has to be --

MR. RIPLEY: Yes, some guidance.

MEMBER WYMER: -- added to. But with respect to involving research in this thing with respect to dose measurements, where do you stand on that? What have you done? I know that you have appointed a contact, but that doesn't mean much.

MR. RIPLEY: Okay. We have met with research to a large extent to discuss both the rule making in general, and specifically most of our time has been in discussion of this distinguishable background criteria.

And as a result of that, research now concurs with our rule making based on us deleting -- and which we have already deleted -- that distinguishability from background as a criteria. So that is a done deal.

In addition, let me just point out that the guidance that is needed to address the interactive dose effects is exactly that guidance. In NMSS's response, they have concluded -- and we specifically asked them to conclude -- that in the time that they have spent since October of last year there is no further changes or modifications needed to the rule making or any of the things that are proposed in the proposed rule as it stands today.

So further guidance will be provided to licensees on one element of it. However, it does not impact our ability to go on and publish the rule and get in this public comment period.

MEMBER WYMER: I have a question that I am just curious about. I think there is something about having to amend the license if the site boundaries are defined by a map, but are there actually sites that have been licensed for reactors where they have not defined the site boundaries?

MR. RIPLEY: They have all defined the

site boundaries. In fact, every one has a map, and many times the site description -- its size, and its areas and what not -- were an earlier technical specification, and were included in the tech specs or in the license.

MEMBER WYMER: Then why make the distinction then?

MR. RIPLEY: Well, we are not really making the distinction. What we are saying is -- well, we are not really making any distinctions. I am just pointing out that most sites had moved over to the FSAR.

Oyster Creek in 1998 had not done that yet, and we make the distinction in our rule making in the statements of consideration that the licensee needs to be aware of that if he still has a description of his site in the license or in the tech specs, which are a part of the license, and then he would need an amendment in any case, regardless of the radiological conditions.

MEMBER WYMER: So some do and some don't have it?

MR. RIPLEY: Some do and some don't. Really, it is a transitional thing as the plants have done the work to go ahead and remove some of these

things that makes them transition into the standardized tech specs, which do not include the site descriptions within the tech specs, per se. They belong in the FSAR and that's where they are.

MEMBER WYMER: Another question I had is that if you release part of a site to unrestricted use, then that means that somebody can do anything that they want to on that site.

And it seems to me that there are some things that they could do which could impact the licensed site. How is that handled?

MR. RIPLEY: Well, it depends on what kind of impact we are talking about.

MEMBER WYMER: Let's say a really bad impact. Like somebody builds an oil refinery there or something. I am taking something out of the air, but something really bad.

MR. RIPLEY: The siting rules in Part 100, as well as -- and which include the requirement for an exclusion area, inside which the licensee is precluded to allow certain things from happening, like building something that would be a hazard to the site.

And it could be that depending on how much the site boundary was shrunk as a result of the partial site release, that those kinds of impacts

would need to be released, or need to be judged.

But the licensee is obligated to know and document what the proposed use of that property is.

MEMBER WYMER: It is unrestricted.

MR. RIPLEY: That's right, but he is still required to assess that in determining what the potential impacts are, and taking any actions at the time of the release. Now, you are right. Downstream it is in fact unrestricted.

MEMBER WYMER: It is in fact a pretty loosy-goosy thing.

MR. RIPLEY: But when you think about it, that is really no different than the existing case of a licensee today. Outside of his light and sight boundary at the edge of his owner controlled area, anything can go on out there. And whatever local regulations or whatever --

MEMBER WYMER: Except that now you are closer.

MR. RIPLEY: Except that now you are closer, that's right, and because of the fact that you are closer, then it needs to be looked at closer. But you are right.

Unrestricted use is unrestricted use, and OGC has already weighed in other than that exclusion

they talked about in the case where exceeding the criteria based on new information, we probably had no jurisdictional authority once the release is done.

MEMBER WYMER: Okay.

MR. RIPLEY: So it requires having our head together at the time that we approve the release.

MEMBER WYMER: And then one final question. It seems the factor having to do with this interaction effect, if you release part of the site to unrestricted use, and it is a long time between that and the time that you actually go to a license termination process, then during that period of time it seems to me that there is a possibility of some radioactivity from the license site to kind of move over there, depending on the length of time and what is involved, and something like that.

MR. RIPLEY: To move from the released area to --

MEMBER WYMER: No, to move from the still licensed area to the released area, and what are the odds of that happening?

MR. RIPLEY: Well, in fact the most credible examples of that would be possibly ground water would shift and change. And I see that Chris McKenney stood up, and he might respond to you on

that.

MR. MCKENNEY: I am in charge of the NMSS group to develop the guidance.

CHAIRMAN GARRICK: Do you want to give your name?

MR. MCKENNEY: My name is Chris McKenney, NMSS, Division of Waste Management. That was specifically an issue, which was that we want to look at both processes that could make the partial site release effect the reactor site as it is operating, or as it is in the decommissioning mode.

And which has been discussed previously, and changing the site boundary, and all those issues. Additionally, we wanted to look at processes that could affect a partial site release that could come from the facility, and because it is all their land right now, that does need to be considered.

And so those issues would need to be looked into; is there potentials through different pathways, like ground water, or surface water, or other ways, to recontaminate or add contamination to the other land and that isn't there today.

MEMBER WYMER: There is always potential, but the question is --

MR. HARRIS: Right, using a risk approach,

a credible potential that actually results in actual impact to the decision.

MEMBER WYMER: Well, a licensee is actually required to address that issue.

MR. HARRIS: Right. They would have to look into it and go into the process. And then in the future this would be the source of possibly a new source of information if the assumptions and everything else turned out to be false.

Or depending on how it is, it could just limit the amount and they can decommission the rest of the site. In other words, having the rest of the site decommissioned to 25 MRN, and they may only be able to do it to 10 or 15, because the partial site may have such a dose impact to somebody who lived on both the partial site and the main facility. They would have to take that into consideration.

That's why we are requesting a progressive or future look at the site so that people are aware of those sort of issues to weigh out, and that they are aware of those issues, and the licensee can decide what the risk is to them in releasing this property.

MEMBER WYMER: That's why the license termination process goes back to the whole site again.

MR. HARRIS: Right.

MEMBER WYMER: Okay. Thank you. That's all I have.

CHAIRMAN GARRICK: It seems as if this rule is coming about like so many other rules. The problem develops and you need to deal with it, and the existing rules don't work, and so you create another rule that will.

Supposing Oyster Creek's request had not come along and that you envisioned that there could be an improvement in the license termination rule, or another rule enhancing the flexibility of what the license can do with respect to the release of a site that is going to be decommissioned. What you have written it any differently?

MR. RIPLEY: I would say no. I think that was probably the approach that we took is a proactive approach without regard to what has happened in the past and balancing the various pillars involved and the public confidence, versus the need for effective and efficient regulations.

I know that sounds like preaching to the choir, but that is the approach that we would have taken in any case. I think the rule would have come out the same.

CHAIRMAN GARRICK: Is this going to come out as a separate rule?

MR. RIPLEY: Yes. There is a new section, 50-83, that is being added to 10 CFR 50, which is the procedural portion of it, and provides the process. And then there are amendments to the other sections as I indicated, to 50-75, record keeping, et cetera. So it is not an integrated rule.

CHAIRMAN GARRICK: I guess what I am getting at is there -- if we had approached it just from the standpoint of modifying the license termination rule, but to give the licensee a lot of flexibility in releasing the land, if we think of it that way would we do it the say way that we have done it? It is kind of the same question, but from a little different perspective.

MR. RIPLEY: Would we approach it from the --

CHAIRMAN GARRICK: Yes, I see this a little differently, I guess. I guess I see that there is a real opportunity here for enhancing the way in which sites are decommissioned, and releasing land quickly rather than -- well, sooner rather than later. And yet that is not quite this rule was put into place.

MR. RIPLEY: That's right.

CHAIRMAN GARRICK: And so my thought here -- and which is probably not a very good one, is that could we have written this a little differently to provide for much greater flexibility and much quicker release of lands that are tied up in these large sites.

Because they are large sites, and had we approached it more globally, more from the standpoint of decommissioning rather than the releasing of land.

It is not unlike a strategy that has been suggested many times for some of the nuclear weapons sites, where you take a Hanford that has 460 square miles, and really the problems reside in something that is only about 10 percent of that.

So you could release 90 percent of the land in a very quick and short order if you didn't get the whole process completely entangled in a kind of a legal maze that stands in the way of doing it.

And I was just struck by the idea that maybe now that we are going to have partial release there are some things that could be done with this rule that would give it a lot more flexibility, improve the public participation and image, and acceptance, and at the same time probably save a lot

of money. And I was just very curious as to how visionary you were when you did this.

MR. RIPLEY: Well, I don't think we were visionary to the extent that you are talking about. I don't believe it was viewed, or at least I don't see it in thinking about it -- and this is the first time that I have thought about it as you have brought it up, that really there is enhancing the decommissioning process by purposely going in and providing the mechanism for a partial site release.

I think to the contrary that it is really providing something to the benefit of licensees who would like to do that for their benefit. That is a large site, and maybe there are some reasons to say that from an overall global decommissioning process standpoint that it may be better off to reduce the size of the site.

But I don't see that myself, and so maybe to answer your question that the answer is no. I don't think we would have headed off in that direction.

Really, it is reduced down to providing a process to licensees, and to prevent them from circumventing the license termination rule, a stop gap because of this gap in the regulations that I talked

about.

That is really the thrust and purpose of the rule making and therefore would be the way that we would go if we didn't otherwise see a benefit in any case to partial site release, which I am not sure is there from our standpoint.

CHAIRMAN GARRICK: Okay. Milt.

MEMBER LEVENSON: I have a one question. It seems to me that there is a somewhat difference v between partial site release of a piece of property out there at the end of the site somewhere, and your comment that one of them is internal to the site.

That the unrestricted release internal to a site, I must admit that we worry about the things that we know less about. I would be very nervous about putting an LNG tank in the middle of my reactor site if it were my reactor. How are things like that controlled?

MR. RIPLEY: Well, let me recharacterize my statement that Haddam Neck was planning on this release in the middle of their site, and it is a parking lot area that is currently in the middle of their owner controlled area currently.

Their release is going to -- well, it is to the northwest of their reactor building and fuel

facility, et cetera.

MR. HARRIS: Northwest.

MR. RIPLEY: Northwest. It is everything that side of it, and so they will own that parking lot, and then they will have to grant back to Connecticut Yankee access to the road, because the road that now is coming in is now that parking lot to the site area is the site access road.

So when the release is finished, it will no longer be in the middle of their site. So I mischaracterized what is now currently in the middle of their site.

Now, as far as this liquid natural gas storage facility, that is the subject of a very huge hazards analysis that is ongoing right now that will come for our approval because it is an unreviewed safety question and is another amendment process all of its own, and the impact on the existing facility.

It is some several hundred yards from their fuel storage building, and they envision this humongous concrete structure around it and what not, which is part of their safety hazards analysis.

MEMBER LEVENSON: But you said they envisioned bringing it to you as an unresolved safety issue, but if the land is not under your jurisdiction

because it is completely released, what forces people in the future to bring things to do, to the NRC?

MR. RIPLEY: On the --

MEMBER LEVENSON: Well, suppose at the moment they just said that we don't want this piece of land, and we don't need it. We want to see it and we want to get rid of it. And then two years later somebody decides to put an LNG tank there.

What mechanism or regulation, or how do we assure that such safety issues get reviewed?

MR. HARRIS: Well, it really comes down to -- this is no different than a decommissioned power reactor and sort of test reactor out there, where the environmental exterior of the licensed facility changes.

The licensee still has the safety analysis report that needs to be maintained and updated, and that in Chapters 1 and 2 of that FSAR describes the environment off-site of the site, and the licensee is required and it is their responsibility to keep that updated.

Any change to the final safety analysis report requires a 50-59 review, and that requires a hazards analysis, and if they determine that there is a safety question there, they are required to come to

the NRC.

The LNG scenario is pretty well known within the industry and within the staff, and that is clearly --

MEMBER LEVENSON: Yes, but what I am following through on is that that is correct, and the utility owns the reactor, and brings you the issue, and you come to the conclusion that it is an unresolved safety issue, but you don't have jurisdiction over that land anymore if it is unresolved.

How do you prevent somebody from doing that? Do you force the utility to shut down its reactor for an unresolved safety issue off-site? Jurisdictionally, this is very --

MR. RIPLEY: Well, I guess as Paul said, this is the same case of property outside the owner controlled area that someone would choose to do something on, and whatever existing requirements that they would have to meet, in terms of their being adjacent to a licensed facility, I don't know for sure exactly what it is. But those controls exist, but I can't describe them to you.

MEMBER LEVENSON: But presumably in the past those areas were big, and the probability that

something off-site could impact the reactor was quite different than when you use the terminology that this is on a piece of land that originally was in the middle of the site. That is the thing which I wonder about.

MR. RIPLEY: And it is a good question, and it again speaks of this unrestricted use.

MR. BECKNER: Mike, can I address that quickly?

MR. RIPLEY: Sure.

MR. BECKNER: My name is Bill Beckner, and there is an answer to your question, but we just don't know it right now. Off-site hazards do change with time, whether you have made the site small or not, and there is some provision for looking at that.

And I was talking to my colleagues at the table, and we are not sure what they are, and we will get back to you with what that answer is, and what the controlling provisions are to periodically look at off-site hazards.

MEMBER LEVENSON: Well, it seems to me that it isn't so important that you get back to us as it is that the new rule extends whatever that is in the past to this new land.

MR. BECKNER: It is a valid concern.

Thank you.

MEMBER WYMER: John, you had a question?

CHAIRMAN GARRICK: I just wanted to ask one final question. How do you -- in this era of when the NRC is trying to adopt a risk-informed performance-based way of looking at issues, and making decisions, how do you risk informed decisions on partial site release?

MR. RIPLEY: A good question. I don't have a ready answer for you. I can't really address that. I am not sure how you would accomplish that.

There is an in-process review of decommissioning related rules and bringing them into an integrated rule making process that would address risk informing those regulations. However, partial site release was not part of the scope of that effort either. So probably nothing is envisioned now and I am not sure how you would accomplish it.

CHAIRMAN GARRICK: Okay.

MEMBER WYMER: And in final conclusion, let me say that we do note your request that we respond in some way so that we don't hit you with something after you have already put the rule in place.

MR. HARRIS: Just to answer that one,

understand that the intent here is to brief the committee. There is by no means a closed door here. We expect to continue dialogue, especially during the public comment period after the proposed rule comes out and something getting published.

CHAIRMAN GARRICK: Right.

MR. RIPLEY: We would expect to be briefing this committee at that time.

MEMBER WYMER: Okay. Thank you very much.

CHAIRMAN GARRICK: Yes, thank you. Okay. License termination plan and review and lessons learned.

(Brief Pause.)

MR. NELSON: Good afternoon. My name is Bob Nelson, and I am Chief of the Facilities Decommissioning Section in the Decommissioning Branch, Division of Waste Management.

And I am here today to discuss the topic of lessons learned in the license termination plan review process. I am also going to sneak in a little status report on where we stand on the license termination plans and give you some background information on that.

And then discuss in some detail some lessons that we have learned during this process, and

improvements that we plan as a result of those lessons.

I am going to start with the Trojan plant. I am not going to read through all these dates, but the Trojan plant was the first license termination plan that we initiated a review on.

In fact, it was the first plan submitted under the license termination rule. It was the first plant to submit a MARSSIM type final survey plan. So it represented a lot of firsts for us.

We completed the review of that license termination plan, and the plan was approved by license amendment last month.

And for Maine Yankee, we have completed our initial review, and you will note here that I have identified a two-phase review process, and that's because of the involvement of a contractor supporting a technical staff under a different time frame than -- the contractor's portion was under a different time frame than ours, the portion that we were reviewing in-house.

And so we decided to break the review into two parts rather than hold up the whole review until the contractor could finish. So we finished Phase One in October, and Phase Two in January.

But I should note that the licensee has indicated that they will submit a revised license termination plan, and currently that their date is April 15th of this year.

At which time we will have to look at that revised plan and make an assessment about what additional reviews are required. And just for scheduling purposes, we have made some assumptions, and based on what we believe will be changed, we believe we can complete the review by January of 2002.

But we will need to reassess that date after we have received the revised license termination plan.

Connecticut Yankee. Again, we have conducted a two-phased review of that licensed termination plan, and we just recently completed the second phase.

We will be meeting with the licensee shortly to discuss our comments on that, our specific comments on phase two. We have already made on phase one.

Responses to both sets of questions are pending, and we hope to be able to complete the review in September of this year.

MEMBER LEVENSON: Is there any reason why

Connecticut Yankee takes 6 or 7 months less than Maine Yankee?

MR. NELSON: The substantive difference between the two is that we are going to get a new LTP for Maine Yankee in April, and that compounds -- and to what degree we have to go back and reexamine things, we don't know.

MEMBER LEVENSON: Is that because the original one was not as complete?

MR. NELSON: No, the original plan included a concept called rubblization, and also there original plan addressed compliance with NRC's dose standards in the license termination rule.

They have made a commitment to the State to comply with more restrictive standards that the State has established by legislation, and to eliminate basically the rubblization concept.

So there are some substantive changes, but exactly how those will be reflected in the plan we don't know. But that is the driver on the schedule right now.

MR. NELSON: The Saxton plant. We again completed the two-phase review. Unfortunately in this case, substantive additional characterization is needed at the site, and because of weather conditions

at the site and other factors, they have informed us that they won't be able to complete that characterization and provide that data to us until late in December of this year.

Therefore, we have moved out our schedule for completion until April of 2002. Any questions on the review status before I go on to lessons learned?

CHAIRMAN GARRICK: Did all of these go through pretty much very similar steps?

MR. NELSON: Yes, they did. We did an acceptance review in all cases, and we did or had a public meeting at the licensee's or near licensee's facilities within a few months after the receipt of the LTP.

Then with the exception of Trojan, we have imitated this two-phase review process. Trojan was different. We didn't do that because we didn't have a contractor involved. Trojan was a little simpler.

The Trojan plant decided to use the generic screening criteria rather than develop site specific. So we had no dose modeling needs for this site.

And the Trojan also had a previously developed EA for a decommissioning plan that they had submitted earlier. So we had a simpler analytical

task, and some of the work had already been done to support the amendment review.

So it was a different approach that was taken for Trojan, but the other three have been essentially the same.

MEMBER WYMER: Do you have a sense of how many more are in the pipeline?

MR. NELSON: Not many. Fermi One may submit a license termination plan in the next couple of years. I believe that they decided to go into active decommissioning, we believe.

Big Rock Point, they had said that they want to have their license terminated by -- I believe it is July of 2005, which would mean that they would have to submit a decommissioning plan no later than July of 2003 to meet the two year requirement. Those are the only two that I can speak to.

MEMBER WYMER: So you don't anticipate a staffing problem, or any big problems?

MR. NELSON: No, for planning purposes, for our budget planning purposes, we are assuming essentially one LTP per year, and I don't see anything more than that.

I certainly don't see the four LTPs at one time that we have experienced within the last year to

year-and-a-half.

MEMBER WYMER: You don't have a sense of how many are coming along each year at the end of their 40 years?

MR. NELSON: No.

MEMBER WYMER: But you could get that if you wanted it? I know that a lot of them are getting renewed, but some of them won't. So just by going back to when they were licensed, you could sort of calculate how many could come.

MR. NELSON: Could, but many of them may stay in safe store for years. So it is difficult to make that estimate.

MEMBER WYMER: Okay. I was just curious.

DR. LARSON: Other than Maine Yankee, are they all going with the 25 MREM and don't worry about ground water?

MR. NELSON: Yes.

CHAIRMAN GARRICK: It appears that plant type and size is not as much a factor as site problems and communication issues, and what have you. Is that a fair assessment?

MR. NELSON: I think that is a fair assessment. You will see that as we go through the lessons learned.

CHAIRMAN GARRICK: Because this is a very small plant?

MR. NELSON: A very small plant, but historically it has been around for along time, and the unique feature of this site is that there was a coal-fired plan right next door.

And the Saxton plant used that steam turbine as basically its energy sync, and that plant was cleaned up or was removed many years ago. Fortunately, the footprint is contaminated, and which they just discovered.

And they also have other hazardous wastes buried in the footprint, which complicates the characterization process.

CHAIRMAN GARRICK: An interesting question is can you take these lessons learned and feed them into the existing plants who may have similar situations? When you said a coal plant next store, I immediately thought of Beaver Valley.

It is not quite as close as this, but they do have right next door a very large coal plant. Are these lessons learned valuable to other installations such as Beaver Valley, and the way that they conduct their maintenance?

MR. NELSON: Well, I can't speak

specifically to any plant, but I will say that, yes, I think they are a valuable lessons learned, and that will get to the implementation of -- which is the last slide in my presentation. So if you hold on that, I will come to it, I promise you.

CHAIRMAN GARRICK: Good.

MR. NELSON: Okay. If there are no other questions on plant status, then I will transition into lessons learned. First of all, and maybe most importantly, is that early and frequent consultations between NRC staff and licensee are needed and encourage during the planning and scoping phase of not only LTPs, but decommissioning plans.

And I will now speak to both because really these lessons learned apply to both decommissioning plans and license termination plans. In this context, we encourage an early meeting between NRC and the licensee to discuss the planning and content of the LTP or DP.

We believe that these discussions should address such things as past and current licensed operations, types and quantities of radioactive materials used or stored; activities that may have an impact on decommissioning operations, decommissioning goals, such as restricted versus unrestricted license

termination.

Basis for the cleanup criteria, and development of specific cleanup goals, and whether the licensee plans to use default cleanup values or site specific cleanup values, and any potential impact on the environment that may result as a result of the cleanup.

To support these meetings, we developed Appendix A to new reg 1727, which is the NMSS decommissioning standard review plan. It is developed in the form of a checklist. During the meeting, we would with the licensee go through this checklist and address site specific requirements that ought to be included in the decommissioning plan or LTP, and make a record of that checklist for future reference.

That and product, and then as a marked up checklist, which defines the technical elements and regulatory requirements that should be covered in the upcoming submittal.

We hope that this process provides a better understanding of the type of information that we feel we need to be included in either document, and familiarize the licensee with the process that the staff will use to evaluate their submittal.

This approach is anticipated to minimize

the need for request for additional information, and reduce the number and iterations of submittals, and expedite the staff technical review.

In fact, we have implemented this process with several upcoming decommissioning plans with three different licensees. And in each case the licensee has told us after the meeting how useful they found it, and we had the same reaction to that process.

Fortunately, we did not have this process in place prior to or at the time that we started receiving the license termination plans. The second lesson that I have enumerated here is that operational environmental monitoring of ground water is unlikely to be adequate for site characterization to support dose assessments.

Environmental monitoring is normally conducted at the fence line or even off-site, particularly in the ground water area, and this does not provide the information needed to support a dose assessment.

For example, monitoring off-site doesn't tell us what the ground water -- whether there is any ground water contamination on-site.

In fact, the use of the screening criteria for soils, one of the fundamental assumptions, is that

there is no current ground water contamination unless you have data on site ground water contamination, and you don't know whether you can use the default soil values or not.

Also, on-site wells normally provide information regarding the hydrogeologic parameters of the site, which would be needed for dose assessment, and knowing the types of soils, and rock, and the depth of those, and the depth of the ground water, and soil types.

And some of the information that you would gather during the installation of a well that would be needed to support a site specific dose assessment.

The design of the final survey must involve the application of appropriate data quality objectives. In this context the licensee needs to identify all appropriate data quality objectives, and planning and designing the final status survey plan.

I summarize this bullet by saying you need to know where you are going before you plan how to get there. And the DKO process provides the structure to do just that.

The process identifying the DKOs ensures that the survey plan requirements, and survey results, and survey evaluation are of sufficient quality,

quantity, and robustness to support the decision on whether the cleanup criteria have been met using this required statistical test.

Major elements of the process include, first, a clear statement of the problem; the identification of all related decision statements and alternative actions, including selection of the most appropriate scenario to be analyzed.

The identification of the information needed to support this decision making process; the definition of the site physical, temporal, and spacial boundaries for all environmental medias and structures, including reference areas that would be covered by the decision process in any subsequent dose modeling.

The development of the appropriate decision rules and identification of the cleanup criteria; specifying types of the limits for the type one and two decision areas in support of the no hypothesis, and impacts on sample size.

And finally the optimization step, looking at the process of collecting data and updating the survey design to meet those DQOs.

We have observed that licensees have difficulty in scoping out the DQOs, and have not taken

full advantage of the DQO process, especially the final step, the optimalization step.

Experience has shown that the process is often rigidly structured rather than relying on too much characterization data, and not being readily open to the possibility of incorporating new information as it becomes available.

CHAIRMAN GARRICK: Don't most of the sites have ground water monitoring programs of some sort going because they are looking for Tritium and other - -

MR. NELSON: Some do, but not necessarily in all the right places that you need to support a dose model. This is the problem that we experienced at Trojan.

The Trojan plant decided to use the default screening criteria, but didn't have data to show that they didn't have ground water contamination on-site.

So as a condition of approval of the license termination plan, we included a requirement in that approval for them to collect that data, and if necessary, come back and revise the cleanup criteria if they found any ground water contamination on site.

MEMBER LEVENSON: If the site had a coal

plant on it, how would you differentiate whether the contamination in the ground was what legally came from the coal plant that is not radioactive?

MR. NELSON: That's true, but the contaminants that they are finding at Saxton are clearly Cesium 137, strontium.

MEMBER LEVENSON: They are not finding uranium?

MR. NELSON: No, that is not the problem at all. It is clearly contaminants resulting from the operation of the nuclear power plant.

In-process inspections are more efficient than a one-time after the fact confirmation surveys. As a result of the final survey problems experienced at the Sherm nuclear plant, an in-process final survey approach was developed at the Fort St. Vrain plant.

At the Sherm Plant, the confirmatory survey was conducted after the licensee had completed most of the final survey and many of the staff involved in that survey were no longer available to address questions and issues that were identified by the staff during the confirmatory survey.

Simply put, we were too late. The in-process approach we are now implementing at all of our sites has allowed the NRC and the licensee to make

side by side measurements, compare instrument readings, and sensitivities, and address survey issues early in the process, rather than at the end of the process.

The in-process approach would result in a significant cost savings and would show a more accurate survey, and help the licensee in maintaining their release schedule.

Following on the first point about having the conversations early, a continuous dialogue is needed throughout the process so that the licensee can take advantage of the inherent flexibility in MARSSIM, the multi-agency site survey investigation manual.

In reviewing LTPs and DPs, we have observed that licensees are often boxing their approaches into rigid formats and structures, thereby locking out any operational flexibility that may be available.

Frequently we find that the derivation of the derived concentration guidelines, or DCGLs, are not fully justified, and they should include all assumptions and justifications for the parameters used.

For example, area factors. Area factors are needed in the final survey status to determine

such things as required scan, minimum detectable concentration, and a developed, elevated measurement limits or values, which we call DCGL/EMC, or elevated measurement comparisons.

These are needed to identify small areas that may require further investigation, and frequently these area factors are not provided for residual activity on building surfaces.

Volumetric contamination is another problem area, because volumetric contamination does occur, and often does occur within building structures, some licensees have assumed that it is appropriate to use the DCGLs that have been developed for building surface contamination for these areas without additional justification on the appropriateness of that use.

We advise licensees to develop specific DCGLs for volumetric contamination, which would consider the potential routes of exposure to residual activity in the material if the structure is eventually torn down, for example.

As an alternative , licensees can demonstrate that these cleanup values developed for surface contamination will bound the possible effects from exposure from other configurations in the

building structure.

A third area under this bullet is modeling results. Licensees frequently use RESRAD or D&D to generate the DCGL values and to perform dose assessments, and these often do not include printouts from the codes as part of their submission.

This information is typically omitted simply because of its size. It can be voluminous. However, without this information, it is difficult for us to undertake confirmatory analyses, or to complete our review of the licensee's analysis.

We suggest that the licensees provide output results from their analyses that they used to develop the DCGLs, and if the output values do not provide an echo of the input values, then we would also ask that that also be included in the submission.

Licensees often use a combination of default and site related parameters in their analyses to develop the cleanup criteria. In many cases, little or no justification is provided for the reason for using the site specific parameter values, or the defaults.

This can lead to enormous uncertainties in assessing the appropriateness of the cleanup values or the calculated dose to demonstrate compliance with the

dose standard.

We categorize the parameters in the models in one of three ways; the behavioral, metabolic, and physical parameters. Licensees may use the default values for the behavioral and metabolic parameters as long as these values are consistent with the generic information, or generic definition of the average member of the critical group, and the screening scenarios that are used.

Site specific physical parameters should be used and justified, and we found this not to be the case.

A clear relationship is needed between the planned decommissioning activities and the estimated cost. In order for us to make a finding that sufficient funding is available to complete decommissioning, the updated cost estimate and the remaining site dismantling activities, and the remediation plan must be consistent.

The updated cost estimate should be based on the remaining activities, and the plans on how these actions will be completed, and this has not always been the case.

It has not always been a direct or easily detectable tie between the elements and the cost

estimate, and what the licensee says they are going to do in the other sections of the LTP; almost as if two entirely separate entities developed the sections without discussing those.

The next point goes to the matter of characterization. Experience has shown that old records and results of operational surveys, and post-shutdown scoping surveys, have been submitted as substitutes for characterization surveys.

While these records are important and should be looked at, they are not a substitute for characterization. We certainly do encourage licensees to review old records and to conduct personal interviews of both current and past employees, and key contractors.

However, there is still a need to present this information in its proper context, and to qualify its usefulness in how it might be supplemented.

When digging a little further into the characterization issue when we see that the characterization information is lacking, we found that the characterization data in often cases does exist, but it just simply has not been submitted to us for a review.

CHAIRMAN GARRICK: Bob, how are you --

what action if any are you taking to overcome some of these deficiencies?

MR. NELSON: Well, in this specific case, where we note just a serious deficiency in characterization information, we have had knowledge and had every reason to believe that the information was available, but it just wasn't submitted. So we go looking.

We ask, and we go back to the files, and find it, or go to the site and say we have it. It is right here. So we look at it, and so it is going back and asking questions, and pulling the threads that lead us to the data.

Clearly it is better if that information is presented as a package, rather than us having to go back and ask the questions to find it.

CHAIRMAN GARRICK: I guess what I am getting at is there any requirements that should be changed, or modified, or added in the operating license to minimize some of these difficulties?

MR. NELSON: I don't see it as any requirement. New requirements would have to be replaced on the operating license to collect more data. It is a matter of packaging that data and providing it to us.

Now, there have been cases -- and I mentioned Saxton earlier, where there was contamination found after the license termination plan had been submitted, and that really goes back to my point about relying exclusively on old records to determine that an area is unimpacted.

For areas close into the site, you probably need to take some confirmatory samples to determine that what you have deduced from the record review is in fact the case. They did that, but they did it after the fact.

MEMBER WYMER: So you get this information out to the potential people putting in an LTP at these public meetings that you have, like the Waste Management 2001 meeting that you presented them at and that sort of thing? Is that how you get it out to them?

MR. NELSON: Well, this particular presentation has been given several times, and it wasn't done at Waste Management 101. I am going to get to who we plan to implement these lessons learned at the last phase of this discussion.

But right now we have been doing it through presentations such as this, and of course direct discussions with the licensee during the LTP

review.

But hopefully as a part of this process and in implementing the steps that we are going to take, we can prevent these types of things in the future.

In the area of environmental reviews the licensee needs to address both non-radiological as well as radiological. While most licensees normally provide sufficient information for the staff to assess radiological impacts in the human environment, most licensees fail to provide information related to current site-specific, non-radiological impacts.

Such areas could, but don't necessarily include, land use, future land use, transportation impacts, ecological, hazardous wastes, public and occupational health, water quality, air quality, historic and cultural resources, noise, socioeconomics.

Again, these might -- all of these may not apply to every site, but normally some of them do, and they are not addressed, or haven't always been addressed.

Well, I promised you the improvements that we plan to implement as a result of this, and this goes back to my very first bullet. We are, and

scheduling, and having these pre-submittal consultations and we are finding them very useful.

The checklists that are developed are -- and I don't know if you are familiar with Appendix A, but it gets pretty specific, and basically we go down and just put a check mark by every item that should be in the LTP, and we discuss that, those items.

And if there is more information that we need to annotate, then we annotate the checklist with notes about what else needs to be provided. We found that very useful, and I think if we would have done that in the cases of the LTPs, a lot of the problems that we have seen would have gone away.

On our side, we need to develop project plans and schedules early in the process and communicate those with the licensees so that they know exactly when we are going to be doing things, and what they can expect to see, and when they can expect to see it, and what we expect to see as far as response times.

This will allow us to schedule meetings up front or ahead of time, rather than ad hoc, and to go through the process in a more orderly fashion.

We also believe a more expansive review is needed at the time of the acceptance review.

Our current practice on acceptance review is that acceptance review is defined to be basically an administrative review, and by guidance it is designed to be conducted by an administrative staff, a licensing assistant, for example.

And the acceptance review is basically just a look at the outline and a quick read of the document to see if the licensee has addressed all of the necessary topics.

In practice, our project managers do those acceptance reviews, but the project managers aren't versed in all the necessary technical areas that are needed to conduct the ultimate review.

We believe that if we expand the technical review to bring in the full project team, and look at targeted areas of the submittal, we can identify significant deficiencies and turn the document back, rather than initiate a full or very intensive technical review and wind up with literally hundreds of requests for additional information.

In other words, enforce the quality on the front end rather than bringing the quality in piecemeal during the process.

The other improvement that we plan is a generic communication, which will basically put in

words what I have discussed with you today. An information notice that would identify these lessons learned, and discuss in more detail what we have seen and how we think that they can be corrected in future submittals.

We are currently working on that generic communication and hope to have that published in April of this year. That concludes my comments and I am open for any questions that you may have.

CHAIRMAN GARRICK: What has been the biggest surprises in this process that you didn't really expect to be the way they are, if any?

MR. NELSON: Well, I would say one surprise was the reliance on environmental monitoring to provide ground water characterization. That took us by surprise.

Internally, we weren't real familiar with the REM process, the radiological environmental monitoring program at reactor sites. And we weren't aware that that might be relied upon as characterization for ground water.

I think generally the problems were with just characterization in general was surprising. That characterization information was provided in a very summary nature or not at all, or not referred to.

That was a surprise.

CHAIRMAN GARRICK: And I would guess that part of that is brought about by the fact that the mentality of reactor safety has always been accidents, and the pathway of greatest concern in that regard has always been air.

And next maybe surface liquids and so on, and that it has taken a little while to develop a real environmental perspective as far as site contamination is concerned. But I would think that that would be changing now.

MR. NELSON: I think those are the two big surprise areas. I think we anticipated that implementing the MARSSIM process would be challenging at the outset.

Both the industry and the agency was embarking on a new guidance that we had really not implemented anywhere before. So I think the growing pains with that were anticipated, although I don't know that we specifically had or knew where those growing pains would be.

I think we knew that they would be there, and so I don't think that was a surprise. But it has been a learning -- implementing MARSSIM has been a learning process I think for everyone.

CHAIRMAN GARRICK: With this being a bit of a surprise, then the thing that we were talking about earlier, about a partial site release, makes it all the more important to be very focused on things like ground water pathways and what is happening in the subsurface.

MR. NELSON: You are absolutely right, and I think we had enough experience with these concerns to do it right at Oyster Creek. We did a very concentrated effort at Oyster Creek, and I think it was well done.

But we at that time had been involved already in some of these issues and we knew what to look for and where the problems might be.

MEMBER WYMER: How significant an economic impact was it for these utilities to go back in now and drill these wells and get this information? Is that a big deal?

MR. NELSON: I can't give you an exact cost estimate. I think there may be 3 or 4 wells that Trojan has to drill. I am not sure of the exact number. It might be up to five.

MEMBER WYMER: Not a whole lot?

MR. NELSON: Not a whole lot. There are certain specific areas that we wanted them to look at

because of the specific hydrogeologic structure of the site. They are basically upon a rock platform, but there is on both sides -- well, there is Columbia River on one side, and then there is an old stream bed on the other.

So it is conceivable that spills could have traversed down or even through the bedrock into the underlying aqua fern, and we are just looking for some confirmatory measurements to say that that did not happen.

MEMBER WYMER: The reason that I ask is because I know that is a big cost deal out at Hanford, and I was just wondering what the relative size was.

MEMBER LEVENSON: There is a big difference in the -- well, in Idaho, the USGS put some 30 or 40 wells in in 1949 all over the whole site, and have been monitoring it continuously. So it varies tremendously.

CHAIRMAN GARRICK: That's because they have a big river running under the site.

MEMBER LEVENSON: But they didn't do anything like that at Hanford.

CHAIRMAN GARRICK: Right. Right.

MEMBER WYMER: Milt.

MEMBER LEVENSON: I had one other

question. The Saxton removal which left the footprint was a long time ago.

MR. NELSON: A long, long time ago, yes, sir.

MEMBER LEVENSON: Do you think that they really missed the contamination back then, or is this a case of much more sensitive instrumentation today that detected what was probably missed then?

MR. NELSON: I honestly don't know.

MEMBER LEVENSON: Is it quite low level?

MR. NELSON: We don't know exactly yet. I mean, they have not done enough characterization to know how extensive it is, or what exactly they are going to haver to do.

MEMBER LEVENSON: Well, sensitivity of instrumentation has changed enough so that if you go back to things done 40 or 50 years ago, they --

MR. NELSON: Yes, sir, but I don't actually know whether it is that. The ground water there is very high, and so it may just be a transport issue. I don't know.

There is another portion of the plant that also needs to be characterized, and it is a discharge tunnel, where the effluent is discharged to the river. It is a rather long tunnel, and actually traverses the

switch yard, the active switch yard at the site.

And they haven't fully characterized that tunnel or what may be underneath the piping that compromises the tunnel. It is a difficult area to get into. And that is another area where they owe us some information.

MEMBER WYMER: We got into a little discussion this morning about decommissioning and license termination for sites, and what was brought up and practically everything that we have heard from the staff is related to reactor decommissioning.

I wonder what is the status of decommissioning other kinds of NRC licensed sites that may have significant amounts of radioactive materials on them, like fuel fabrication plants? Does it say anything about that, or is that --

MR. NELSON: Well, I can give you another hour long briefing on that.

MEMBER WYMER: Give us the 5 minute version.

MR. NELSON: Well, a lot of the lessons learned that I summarized here would apply to materials facilities as well I would expect as they go into or they submit decommissioning plans under the license termination rule.

We have no decommissioning plans for material or fuel cycle facilities. Well, I will correct that. We do.

CHAIRMAN GARRICK: Isn't Sequoia Fuels in this stage?

MR. NELSON: Yes, it is, but it is a little different, in that their plan was submitted before MARSSIM, and so it is a unique character. I would say that we have reviewed one plan, and it is actually a partial cleanup at NFS Irwin, which was developed basically under the license termination rule concept in MARSSIM.

But most of our experience with applying the LTR and the supporting guidance has been in reactors. But we are expecting more Dps in the future. Several in the next couple of years, and which would be LTR compliant.

So we are hoping that these lessons learned will positively impact those submittals. But the overall process is not dissimilar. I mean, we are conducting the same types of reviews or would conduct the same types of reviews on those sites as well.

MEMBER WYMER: Many of the same type of considerations apply.

MR. NELSON: Basically the same

considerations apply, yes. And the up-front consultation with the materials facilities I think is even more important, because most of those, with the exception of fuel cycle, but at the other STNP sites are basically in a possession only status.

They don't have an in-place significant RAD health and safety program. They probably only have environmental monitoring data, and until they start characterizing, they would not have installed wells.

So there are some substantive difference in the types of organizations and the problems that we might anticipate from those different organizations, just simply because of the type of business that they are in.

So I think that it is even more important with the materials facilities that we have these up front discussions and work with them, and have the prelicensing consultations to make sure that we get the right plan in the door when it is submitted.

MEMBER WYMER: Anybody else? Staff?

DR. LARSON: You have the agreement of States involved in some of the other facilities; whereas in reactors you don't, and you haven't seen any problems with their involvement?

MR. NELSON: Well, I wouldn't say the States aren't involved in reactor facilities. They clearly are. The State of Maine is very active at Maine Yankee.

The State of Connecticut is very active at Haddam Neck. The State of Oregon was very much involved with the review of the LTP for Trojan. So I would say the States are involved very much so at the reactor sites.

DR. LARSON: But a Part 50 license is an NRC license.

MR. NELSON: Absolutely.

MEMBER WYMER: Well, if there are no more questions, we thank you very much.

MR. NELSON: Thank you very much.

CHAIRMAN GARRICK: Is it worth asking Bob the question of what does he want from us?

MR. NELSON: I meant to say that at first.

CHAIRMAN GARRICK: Well, maybe you did.

MR. NELSON: No, I omitted that and I should have addressed it. This was principally an information briefing. We are not looking for any specific feedback. If you have any recommendations, clearly we would welcome them. But we are not asking for a critique or any specific memo back form the

committee at this time.

MEMBER WYMER: Good.

MEMBER LEVENSON: Let me ask a curiosity question, because you say you have to look at the environmental issues other than the radiation from the source.

MR. NELSON: Yes.

MEMBER LEVENSON: Back to this situation where there is a joint site that has a coal plant. What would be your response if there were significant amounts of either uranium or mercury in the ground water, both of which are fairly likely from coal plants?

MR. NELSON: I don't know.

MEMBER LEVENSON: Would you have to do something about that, or do you just ignore that?

MR. NELSON: Well, I don't know that we would ignore it. We have to look at cumulative impacts.

So if there is an existing impact on the site resulting from something that is not on site, then we would have to address that the combined impact, the environmental impact in our assessment of our licensing actions. So it very well could impact or very well could be an impact from an off-site

source.

CHAIRMAN GARRICK: Just a final comment. We mentioned earlier the Sequoia facility and that it came in early and maybe was started under a different set of rules. But that one has always intrigued me, and we have heard very little about it.

It intrigues me because of the diversity of the facility. It has a front end solvent extraction process, and it has oxidation reduction activity. It has high temperature components, autoclaves, and it has very interesting material handling problems. It has storage all over the place.

One of these days it might be interesting for this committee to get a real -- from the standpoint of experience, to get a real briefing on what is going on there in the context of license termination activities. Is that a reasonable thing to put on some future agenda?

MR. NELSON: Certainly. We have just had in-house a staff presentation on that site, and we briefed one of the Commissioner several weeks ago on Sequoia Fields. So we would welcome the opportunity to do that.

CHAIRMAN GARRICK: I think the committee would be very interested in it, because it is real

problems. It is real issues, and the plant has been through some very stormy times in its history.

MR. NELSON: It is a timely topic.

CHAIRMAN GARRICK: Yes, and I was thinking about it as you were giving us your lessons learned. So we may want to take advantage of that and maybe piggy-back on the presentation to the Commission or something.

MR. NELSON: We would be glad to do that.

MEMBER WYMER: Thanks again.

MR. NELSON: Thank you.

CHAIRMAN GARRICK: We are going to take a 15 minute break.

(Whereupon, the meeting was recessed at 2:58 p.m.)

CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

Name of Proceeding: Advisory Committee on Nuclear Waste 125th Meeting

Docket Number: (Not Applicable)

Location: Rockville, Maryland

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

Paul Intravia
Official Reporter
Neal R. Gross & Co., Inc.

U.S. Department of Energy
Office of Civilian Radioactive Waste Management

Key Technical Issues — Status Overview

Presented to:
Advisory Committee on Nuclear Waste

Presented by:
Carol Hanlon
Yucca Mountain Site Characterization Office
U.S. Department of Energy

March 21, 2001

YUCCA MOUNTAIN PROJECT

NRC/DOE Technical Exchanges on Key Technical Issues

- **11 out of 13 Technical Exchanges are complete**
  - Total System Performance Assessment and Integration (6/6 - 7/00, San Antonio, TX) - complete
  - Unsaturated Zone Flow Under Isothermal Conditions (8/16 - 17/00, Berkeley, CA) - complete
  - Igneous Activity (8/30 - 31/00, Las Vegas, NV) - complete
  - Container Life and Source Term (9/12 - 13/00, Las Vegas, NV) - complete
  - Structural Deformation and Seismicity (10/11 - 13/00, Las Vegas, NV) - complete
  - Criticality (10/23 - 24/00, Las Vegas, NV) - complete
  - Saturated Zone Flow (10/31/00, 11/1 - 2/00, Albuquerque, NM) - complete

NRC/DOE Technical Exchanges on Key Technical Issues

(Continued)

- Radionuclide Transport (12/5 - 7/00, Berkeley, CA) - complete
- Thermal Effects on Flow (1/8 - 9/01, Pleasanton, CA) - complete
- Evaluations of the Near-Field Environment (1/9 - 11/01, Pleasanton, CA) - complete
- Repository Design and Thermal-Mechanical Effects (2/6 - 8/01, Las Vegas, NV) - complete
- Total System Performance Assessment and Integration - tentatively scheduled for June, Las Vegas, NV
- Preclosure Issues - to be determined

Key Technical Issue Progress

- 5 subissues closed
- 5 subissues open
  - 4 open: Future technical exchange on Total System Performance Assessment and Integration
  - 1 open: Igneous Activity subissue 2 consequences
- 27 subissues closed-pending
- 215 agreements for 9 key technical issues
  - Some duplication in agreements
    - Several agreements support multiple key technical issues
    - Several agreements will be addressed through revision to a common document
- 56 documents transmitted to the NRC, addressing 45 agreements

Key Technical Issue Progress

(Continued)

- **Five documents addressing multiple agreements are behind schedule**
  - **Unsaturated zone features, events, and processes analysis model report**
    - **Supports Radionuclide Transport, Evolution of the Near-Field Environment, and Thermal Effects on Flow agreements**
    - **Anticipate March submittal to the NRC**
  - **Features, events, and processes database**
    - **Supports Unsaturated Zone, Container Life and Source Term, Radionuclide Transport, Evolution of the Near-Field Environment, and Thermal Effects on Flow agreements**
    - **Anticipate March submittal to the NRC**

Key Technical Issue Progress

(Continued)

- Summary of in-package chemistry for waste forms
  - Supports Container Life and Source Term and Evolution of the Near-Field Environment agreements
  - Anticipate March submittal to the NRC
- Preliminary assessment of radiolysis effects from criticality
  - Supports Container Life and Source Term agreements
  - Completion date to be determined
- In-package chemistry abstraction
  - Supports Evolution of the Near-Field Environment agreements
  - Anticipate March submittal to the NRC

Key Technical Issue Status from Technical Exchanges

Key Technical Issue	Number of Subissues	Subissues Closed	Subissues Closed-pending	Subissues Open
Unsaturated and Saturated Flow	6	2	4	0
Igneous Activity	2	0	1	1
Container Life and Source Term	6	0	6	0
Structural Deformation and Seismicity	4	1	3	0

Key Technical Issue Status from Technical Exchanges

(Continued)

Key Technical Issue	Number of Subissues	Subissues Closed	Subissues Closed-pending	Subissues Open
Radionuclide Transport	4	0	4	0
Thermal Effects on Flow	2	0	2	0
Evolution of the Near-Field Environment	5	0	5	0
Repository Design and Thermal-Mechanical Effects	4	2	2	0

Key Technical Issue Status Future Technical Exchanges

- **Total System Performance Assessment and Integration (June 2001)**
  - **4 subissues - open**
- **Preclosure Issues (to be determined)**
  - **0 subissues**

Status By Individual Key Technical Issue

- **Unsaturated and Saturated Flow***
  - **Six Subissues -**
    - **Subissue 1 - closed**
    - **Subissue 2 - closed**
    - **Subissue 3 - closed-pending - 4 NRC/DOE agreements**
    - **Subissue 4 - closed-pending - 5 NRC/DOE agreements**
    - **Subissue 5 - closed-pending - 14 NRC/DOE agreements**
    - **Subissue 6 - closed-pending - 4 NRC/DOE agreements**

***Note:**

Unsaturated Zone Flow Under Isothermal Conditions technical exchange held 8/16-17/00 addressed subissues 3, 4, and 6
Saturated Zone Flow technical exchange held 10/31/00, 11/1-2/00 addressed subissues 3, 5, and 6

Status By Individual Key Technical Issue
(Continued)

- **Igneous Activity***
  - **Two Subissues -**
    - **Subissue 1 - closed-pending - 2 NRC/DOE agreements**
    - **Subissue 2 - open - 10 NRC/DOE agreements**

***Note:**
Igneous Activity technical exchange held 8/30 - 31/00

Status By Individual Key Technical Issue

(Continued)

- **Container Life and Source Term***
  - **Six Subissues**
    - **Subissue 1 - closed-pending - 17 NRC/DOE agreements**
    - **Subissue 2 - closed-pending - 9 NRC/DOE agreements**
    - **Subissue 3 - closed-pending - 10 NRC/DOE agreements**
    - **Subissue 4 - closed-pending - 11 NRC/DOE agreements**
      - **Duplicate agreement items from Container Life and Source Term subissue 3**
    - **Subissue 5 - closed-pending - 7 NRC/DOE agreements**
    - **Subissue 6 - closed-pending - 4 NRC/DOE agreements**

***Note:**

Container Life and Source Term technical exchange held 9/12 - 13/00
Criticality technical exchange 10/23 - 24/00 addressed subissue 5

Status By Individual Key Technical Issue

(Continued)

- **Structural Deformation and Seismicity***
  - **Four Subissues -**
    - **Subissue 1 - closed-pending - 2 NRC/DOE agreements**
    - **Subissue 2 - closed-pending - 4 NRC/DOE agreements**
    - **Subissue 3 - closed-pending - 4 NRC/DOE agreements**
    - **Subissue 4 - closed**

***Note:**

Structural Deformation and Seismicity technical exchange held 10/11 - 13/00

Status By Individual Key Technical Issue

(Continued)

- **Radionuclide Transport***
  - **Four Subissues**
    - **Subissue 1 - closed-pending - 5 NRC/DOE agreements**
    - **Subissue 2 - closed-pending - 11 NRC/DOE agreements**
      - » **Duplicate agreement item from Radionuclide Transport subissue 1 and Unsaturated and Saturated-Flow Under Isothermal Conditions subissue 5**
    - **Subissue 3 - closed-pending - 10 NRC/DOE agreements**
      - » **Duplicate agreement item from Structural Deformation and Seismicity subissue 3**
    - **Subissue 4 - closed-pending - 3 NRC/DOE agreements**
      - » **Duplicate agreement items from Container Life and Source Term subissue 5 and Evolution of the Near-Field Environment subissue 5**

***Note:**

Radionuclide Transport technical exchange held 12/5 - 7/00 addressed subissues 1-3
Criticality technical exchange held 10/23 - 24/00 addressed subissue 4

Status By Individual Key Technical Issue
(Continued)

- **Thermal Effect of Flow***
  - **Two Subissues**
    - **Subissue 1 - closed-pending - 2 NRC/DOE agreements**
    - **Subissue 2 - closed-pending - 13 NRC/DOE agreements**

***Note:**
Thermal Effects on Flow technical exchange held 1/8 - 9/01

Status By Individual Key Technical Issue

(Continued)

- **Evolution of the Near-Field Environment***
  - **Five Subissues**
    - **Subissue 1 - closed-pending - 7 NRC/DOE agreements**
    - **Subissue 2 - closed-pending - 18 NRC/DOE agreements**
    - **Subissue 3 - closed-pending - 5 NRC/DOE agreements**
    - **Subissue 4 - closed-pending - 8 NRC/DOE agreements**
    - **Subissue 5 - closed-pending - 3 NRC/DOE agreements**
      - » **Duplicate agreement items from Container Life and Source Term subissue 5 and Radionuclide Transport subissue 4**

***Note:**

Evaluation of the Near-Field Environment held 1/9 - 11/01
Criticality technical exchange held 10/23 - 24/00 addressed subissue 5

Status By Individual Key Technical Issue
(Continued)

- **Repository Design and Thermal-Mechanical Effects***
  - **Four Subissues**
    - **Subissue 1 - closed**
    - **Subissue 2 - closed-pending - 2 NRC/DOE agreements**
    - **Subissue 3 - closed-pending - 21 NRC/DOE agreements**
    - **Subissue 4 - closed**

***Note:**
Repository Design and Thermal Mechanical Effects technical exchange held 2/6 - 8/01

Summary - Key Technical Issue Technical Exchanges

- Technical Exchanges have been productive
- Work to address agreements reflects progress
- DOE and NRC need to maintain continuous dialogue
  - Status on progress
  - Revisiting agreements that may be overcome by program changes
  - Feedback on work completed to satisfy agreements

United States
Nuclear Regulatory Commission

PARTIAL SITE RELEASE

March 21, 2001

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BACKGROUND

Partial site release: Release of part of a power reactor site for unrestricted use prior to approval of the License Termination Plan (LTP)

Regulatory gap discovered during Oyster Creek technical specification amendment review:

- Partial site release not provided for in regulations.
- Radiological release criteria of 10 CFR 20, Subpart E, not clearly applicable if not terminating license.

Emerging issue - current need for a partial site release process.

Rulemaking Plan approved April 2000.

- Publish proposed rule in 2001; final rule in 2002.
- Generic communication (RIS 2000-19) issued October 2000.

REGULATORY APPROACH

Rulemaking narrowly focused on unrestricted releases at power reactor sites - operating or in decommissioning.

Adds new section 10 CFR 50.83 defining partial site release process.

Licensee first performs a Historical Site Assessment and classifies the release area in accordance with MARSSIM guidance:

- Impacted Area- some potential for residual radioactivity.
  - Licensee performs radiation surveys adequate to demonstrate compliance with radiological release criteria.
- Non-Impacted Area - no reasonable potential for residual radioactivity.
  - No radiation surveys required.

Partial site release approval process depends on area classification.

SUBMITTALS FOR IMPACTED AREAS

Where the area cannot be demonstrated to be non-impacted, the licensee must submit an application for amendment of its license.

The license amendment application must include:

- The methods used and results of the radiation surveys required to demonstrate compliance with the radiological criteria for unrestricted use specified in 10 CFR Part 20, Subpart E (25 mrem/yr and ALARA).

- The results of an evaluation of the impacts of changing the site boundary.

- A supplement to the environmental report describing any new information or significant environmental changes.

SUBMITTALS FOR IMPACTED AREAS (cont'd)

In response to the licensee's amendment application, the NRC will:

- Conduct confirmatory radiation surveys as warranted.
- Complete Subpart L hearings prior to approving the release if a license amendment involving a partial site release is challenged.
- Approve the amendment application based on demonstrated compliance with the radiological criteria for unrestricted use specified in Part 20, Subpart E.

SUBMITTALS FOR NON-IMPACTED AREAS

Where the area can be demonstrated to be non-impacted, a license amendment is not required.

A written request may be submitted for NRC approval. The submittal will include:

- The results of an evaluation of the impacts of changing the site boundary.
- A description of the part of the facility or site to be released.
- The schedule for release of the property.
- Reasons for concluding that the environmental impacts are bounded by previously issued environmental impact statements.

SUBMITTALS FOR NON-IMPACTED AREAS (cont'd)

In response to the licensee's letter submittal, the NRC will:

- Determine whether the licensee's Historical Site Assessment is adequate.
- Conduct confirmatory radiation surveys as warranted.
- Upon determining that the licensee's submittal is adequate, and that there is no adverse impact on plant safety, approve the release by letter.

FOR ALL SUBMITTALS

For all partial site release submittals, licensees would submit the results of their evaluation to ensure that:

- The public dose limits of Part 20, Subpart D, are not exceeded.
- There is no reduction in the effectiveness of emergency planning or physical security.
- Effluent releases remain within regulatory standards.
- The environmental monitoring program and offsite dose calculation manual are revised to account for the any changes.
- The siting criteria of 10 CFR Part 100 continue to be met.

LICENSE TERMINATION

The License Termination Plan (LTP) must consider all site areas controlled during the duration of the license in demonstrating that the entire area meets the radiological release criteria.

10 CFR 50.82 would be revised to require the LTP to include:

- Identification of any parts of the site that have been released.
- Documentation that the final radiation survey demonstrating compliance with Part 20, Subpart E, includes parts of the site released for use before approval of the LTP.

10 CFR Part 20 would be revised to include partial site releases within the scope of the criteria by which the NRC may require additional cleanup on receiving new information following the release.

RECORDKEEPING

10 CFR 50.75 would be revised to require licensees to establish and maintain records of property line changes and the radiological conditions of partial site releases including:

- Records of the site boundary as originally licensed.
- Records of any acquisition or use of property outside the originally licensed site boundary for the purpose of receiving, possessing, or using licensed materials.
- Records of the disposition of released property including records associated with submittals to the NRC made in accordance with the Partial Site Release Rule.

Recordkeeping ensures that the dose contribution from residual radioactivity associated with these releases can be accounted for at the time of any subsequent partial releases and at the time of license termination.

PUBLIC PARTICIPATION

Proposed rule provides for public involvement:

- NRC will notice receipt of the release request letter or license amendment application and make it available for public comment.

- Public meeting to be held in vicinity of site prior to NRC action regardless of potential for residual radioactivity.

Additional stakeholder meetings to be held during rulemaking.

10 CFR Part 2 would be revised to provide informal hearing opportunities where license amendments involving partial site releases are challenged.

- Commission recently approved with comment a proposed rule which would eliminate need for this amendment to Part 2.

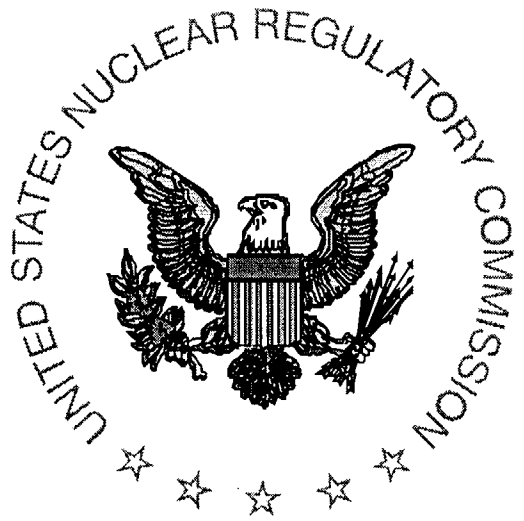
SIGNIFICANT CHANGES

Significant changes to the proposed rule package since initial concurrence review distribution:

- Eliminated distinguishability from background as a release criteria.

- Clarified that licensees are to submit radiation survey methods and results used to demonstrate compliance with the radiological release criteria, rather than merely their plan for demonstrating compliance.

- Incorporate results of NMSS report on interactive dose effects.



LICENSE TERMINATION PLAN - LESSONS LEARNED

Advisory Committee on Nuclear Waste

Robert A. Nelson, Chief
Facilities Decommissioning Section
March 21, 2001

OVERVIEW

- License Terminiation Plan (LTP) review status
- LTP lessons learned
- Improvements

LTP REVIEW STATUS

TROJAN

- Received: August 1999
- Accept Review: September 1999
- Public Meeting: December 1999
- RAI: March 2000
- RAI Response: May 2000
- Approved: February 2001

LTP REVIEW STATUS

MAINE YANKEE

- Received: January 2000
- Accept Review: March 2000
- Public Meeting: May 2000
- RAI Phase 1: October 2000
- RAI Phase 2: January 2001
- RAI Response: Revised LTP in April 2001
- Sched Comp Date: Pending review of revised LTP - January 2002

LTP REVIEW STATUS

CONNECTICUT YANKEE

- Received: July 2000
- Accept Review: August 2000
- Public Meeting: October 2000
- RAI Phase 1: February 2001
- RAI Phase 2: March 2001
- RAI Responses: Pending
- Sched Comp Date: September 2001

LTP REVIEW STATUS

SAXTON

- Received: February 2000
- Accept Review: March 2000
- Public Meeting: May 2000
- RAI Phase 1: August 2000
- RAI Phase 2: November 2000
- RAI Responses: Partial - Will not be completed until December 2001
- Sched Comp Date: April 2002

LTP LESSONS LEARNED

- Early and frequent consultations are needed
- Operational environmental monitoring of groundwater may be inadequate for site characterization
- Design of the final survey must involve the application of appropriate data quality objectives

LTP LESSONS LEARNED

- In-process inspections are more efficient than a one-time confirmatory survey
- Continuous dialog is needed to take advantage of the inherent flexibility in MARSSIM
- Derivation of cleanup levels should include the assumptions & justification for parameters used

LTP LESSONS LEARNED

- A clear relationship is needed between the planned decommissioning activities and the associated cost estimate
- Old records are often inadequate or inaccurate
- Environmental impact reviews need to address non-radiological impacts

IMPROVEMENTS

- Early & frequent consultations with the licensee will be scheduled
- Project plans & schedules will be developed early in the process and communicated with the licensee
- A more expansive review is needed for the acceptance review
- Generic communication to be issued discussing lessons learned