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NDAA Section 5116 Accomplishments,
Challenges, and Lessons Learned

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NUCLEAR REGULATORY COMMISSION

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NRC\DOE JOINT PUBLIC MEETING

NDAA SECTION 5116 ACCOMPLISHMENTS, CHALLENGES,

AND LESSONS LEARNED

PUBLIC MEETING

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Thursday,

July 18th, 2013

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Aiken, South Carolina

The Public Meeting was held at 5:00 p.m., at the U.S. Department of Energy Meeting Center, 230 Village Green Boulevard, Suite 220, Aiken, South Carolina, Mark Gilbertson, Facilitator, presiding.

PRESENT:

MARK GILBERTSON, U.S. DOE HQS., FACILITATOR

LARRY W. CAMPER, NRC

SHERRI ROSS, DOE-SR

LINDA SUTTORA, DOE HQ

CHRISTOPHER McKENNEY, NRC

VIRGINIA (GINGER) DICKERT, DOE Contractor

KENT ROSENBERGER, SRR

~~S~~ZAHIRA CRUZ, NRC

TOM CLEMENTS, Friends of the Earth

KAREN PATTERSON, SC GNAC

LARRY ROMANOWSKI, SRR

STEVE THOMAS, SRR

CLINT WOLFE, CNTA

ROGER SEITZ, SRN~~S~~C

SCOTT L. SIMONS, SCDHEC

KATHRYN L. BEATTY, SCDHEC

JOHN BERG

Comment [N1]: ?

A-G-E-N-D-A

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

5:00 p.m.

FACILITATOR GILBERTSON: I think what we will do is to get started here. My name is Mark Gilbertson, I'm from DOE headquarters, I'm here to help.

But I wanted to welcome you, in here, to the meeting today. What we are going to do is go around the room and introduce each of us. We are a tiny enough group that I really encourage we have a break after the first two speakers, for questions.

So I encourage people to, you know, not sit quietly, but raise your hand and ask questions to us. So we will start here.

MR. MCKENNEY: Chris Mckenney, I'm the Branch Chief of the Performance Assessment Branch at the NRC.

MR. CAMPER: Larry Camper, Director of the Division of Waste Management, and Environmental Protection, at the Nuclear Regulatory Commission.

MS. DICKERT: I'm Ginger Dickert, the Senior Technical Advisor to the Office of the President, with Savannah River Remediation.

MS. ROSS: I'm Sherri Ross, with DOE Savannah River, Waste Disposition and Tank Closure

Application.

MS. SUTTORA: I'm Linda Suttora, and I work for the U.S. Department of Energy Headquarters in the Office of Site Restoration, Office of Environmental Compliance.

And I'm the program manager for these kinds of projects across the country, the Section 3116 and Tank Closures.

Can everyone hear us, or are we speaking too -- okay.

MR. ROMANOWSKI: Larry Romanowski with Savannah River Remediation.

MR. THOMAS: Steve Thomas with Savannah River Remediation.

(Rest of introductions off microphone)

Comment [N2]: In the future, please remind the group to speak up.

FACILITATOR GILBERTSON: Okay. We will turn it over to Linda to kick things off here, for the presentation.

MS. SUTTORA: Let me know if I speak too quickly, or too softly.

So just to orient you to, or remind you of how this process works, in 2005, in the National Defense Authorization Act, there was a section 3116 in there.

And what that did was it provided a

system for allowing DOE to close these waste tanks that contained waste from reprocessing of spent fuel, and other fuel, other wastes.

And we had these tanks located in four sites around the country, and two states signed up to be part of this Section 3116, the State of South Carolina and the State of Idaho.

And then New York and Washington opted out. They also had tanks, but they have been watching this process carefully, and trying to decide whether they want to opt in, or stay the way they are right now.

But what we do is, under the Section 3116 process, we write documents that describe the waste, how we are going to clean up. We have tanks, and then we also do it on the waste itself, when we are going for disposal.

The Secretary of Energy has to make a determination that the waste, that the low activity portion, of the waste, or the cleaned emptied tanks, no longer constitute the type of threat, or risk, that it once did, when it was filled with high level waste, or when it once did, before it was separated into the low activity portion, and we could manage it as low level waste.

And the higher activity portion of the waste, after it has gone through a separation and treatment facility, goes into vitrification, for eventual repository disposal repository.

But part of the Section 3116 was that DOE would consult with the Nuclear Regulatory Commission, that is the first part of that, 3116, is that DOE would consult with the Nuclear Regulatory Commission, on our documents supporting the Secretary's determination.

And the next part, and part of that consultation is NRC would do a technical review of all of our documents, and then DOE would respond to all those questions they had, and comments.

And then the Nuclear Regulatory Commission had designed a procedure for how they would do the consultation, as they would produce something called the Technical Evaluation Report.

We have done this several times, now. The first one was done in 2006, with the salt waste disposal, so that is the low activity portion of the tank, the former tank waste.

And that was done in January of 2006, after consultation with the Nuclear Regulatory Commission for the entire year of 2005.

Also, in 2006, we did the Idaho Waste Determination. And that was for a total of 15 tanks, at this Idaho site, 11 large ones, and 4 small ones.

The large ones, my goodness I forget now, but I think they were about 700,000 gallons. I'm sorry, they were 300,000 gallons. That just popped into my head.

They were 300,000 gallons, and the small ones are 30,000 gallons. And waste determination was done in November of 2006. And of the 11 -- all the four tanks were closed, the four little ones, right away.

Of the 11 large ones, 7 have been closed, and four are still awaiting treatment. And as soon as the treatment facility is up and running, and the tanks can be emptied, then those tanks will also be closed, under that 2006 waste determination.

The next site we did was the F-Tank Farm, and that was done last year, in 2012. And we have, so while the waste determination was done for the entire site, for the entire tank farm, we have continuously emptied and cleaned the tanks, and will be grouting them, as we finish them, and as that will be done, we have finished two tanks last year.

We will do two more this year, and then

we will continuously do, probably, pairs of tanks, as we move along with the process.

And, as I said, it is only applicable to those two states. But let me tell you --

MR. CLEMENTS: Let me ask a question of the previous slide?

MS. SUTTORA: Sure.

MR. CLEMENTS: It is basically a question of --

FACILITATOR GILBERTSON: Tom? Could you go up to the microphone, so that we can get a recording?

MS. SUTTORA: Yes.

MR. CLEMENTS: Tom Clements, Friends of the Earth.

Managed as low level waste and, maybe, forgive my ignorance. But does managed as low level waste means it meets the legal definition of low level waste?

MS. SUTTORA: Yes. And it has the risk of low level waste. Okay?

So, but this isn't all that DOE does. We don't just do the Section 3116 process, to close the tanks. We also must comply with our own internal regulations.

And our regulations are found at DOE Order, and it is called DOE Order 435.1. And there is a high level waste section, and this, we call it the waste incidental to reprocessing process.

And there are several ways to become incidental waste. One is to go through this full evaluation, which is almost identical to the Section 3116 process.

And we will talk, later, what the difference is. And the other thing we do, it is another thing called the citation process.

And citation process is pieces of equipment, laboratory containers, where we had samples, let's say, in a little metal, glass vial or something.

We decontaminate that. But because it was just in there for temporary use, or maybe it was a pipe that went down into the tank, and came back up, and was decontaminated, that gets managed as low level waste, because it hasn't been sitting in the high level tank for a long time.

So we have that citation process, and we have lists of materials, that once it is assayed, and shown to be clean, then we actually dispose of it in a low level waste disposal facility.

So under Section, the Order 435.1, we have a special review group, with funding, we call it the L-Frog. It is the Low Level Waste Disposal Facility Federal Review Group, and short to be L-FROG.

And after the site completes doing the performance assessment documentation, which is the long term assessment of the future risk of a disposal facility, the L-FROG develops a technical team.

It puts together a technical team of experts. And we don't just pick from DOE. We take -- there can't be anybody, on that special review team, cannot be from that site. They have to be from either other sites DOE has, from both DOE, or their contractors.

We also bring in consultants, we bring in academics, we bring experts from around the country. And they join up in a technical review team, and they review all the documents.

It is a long, several month, process. And at the end they produce a report, whether the facility passes, or does not pass. And if it does not pass, we make them go back to the drawing board, and answer a bunch of questions.

Very much like the NRC process. We pepper

them with questions, they have to respond. And Steve is smiling because he has been doing that for years.

So we pepper them with a lot of questions. And the last review I led was at the Hanford Facility, their circle south.

And I meant to go back and count, but it was about 26 pages on the table of questions. So it is not all a very, you know, easy process. The site has to do a lot of work to comply.

What is different is we, as we are a regulatory body, we also view ourselves as an assistance body, because we want success.

So while the site might come in and they might, quote unquote, fail their first review, we tell them what they need to do to fix it, how to fix their document, how to fix their facility, what they need to do to pass.

And so we do get to success in all of our facilities. But it is not a rubber stamped, by any stretch of the imagination.

And then once that review is complete, then they get an authorization to dispose, or an authorization to continue disposing of waste, if it has already been operating. And Mr. Gilbertson is the signatory on that.

Now, when we do a waste and facility reprocessing process, we do the evaluation, that is what the end product is, for that, under the DOE Order.

Instead of calling it a determination, we do an evaluation process. And the decisionmaker, when we do it under the DOE Order, like we do in Washington and New York right now, the decisionmaker on whether, to determine whether that waste can be managed as low activity waste, low level waste, is the Assistant Secretary of Environmental Management, it doesn't go to the Secretary.

And that is how we have written it in the Order. So the way that we did the last few waste determinations, under Section 3116 we, consulting with the Nuclear Regulatory Commission, we have evolved.

The very first one we sort of just did between the two agencies, and brought in the state a little bit, but not that much.

And we wrote down what we thought were the assumptions that would go into the modeling, that goes into the performance assessment. But that performance assessment had already been done, years before.

So they were just reviewing an old performance assessment, but they had a lot of questions, where did you get this assumption, where did you get, why did you write that?

And so it, over time, we recognized we really needed to start from scratch. So the first couple had old PAs that were done with the waste determinations.

And the last couple we started from scratch. And we, and that is three, I guess, that we started from scratch, and walked through with the State, and with the Nuclear Regulatory Commission, and EPA, and started from scratch, and said, why do you have your conceptual model developed this way?

Which is the basis of your eventual long term modeling, you know, what is your basis for your groundwater flow, what is your basis for why you think whatever barriers, man-made and natural barriers, why they would last the way that you think they are going to last and model?

So we stepped through it. And, in fact, the current performance assessment, and waste determination basis documents, that we have produced, we did in a public setting, rather than just between the Nuclear Regulatory Commission, the Department of

Energy, and DHEC, and EPA.

We actually had a public meeting, several years ago in about, I think, July that we walked through with, in a public setting, where we were getting all our assumptions for the model.

So as we are evolving with this process, recognizing that the public part of the process is extremely important. We didn't realize it would be and now we know, and we are fixing things.

So when we finish up this draft determination basis, and the draft performance assessment, now we call it a draft performance assessment, but it has already been through that L-FROG team review.

And we then release it, now, to the NRC and to the public, and state and EPA are members of the public in that part of the 3116. And we get comments back, both from the Nuclear Regulatory Commission, and the public.

And we respond to each and every comment. And then the Nuclear Regulatory Commission issues their technical evaluation report, and DOE finalizes the waste determination, and the performance assessment, and makes the changes necessary in that process, and then walks up to the Secretary's office

and says, are you ready to sign this waste determination?

And then our office beats us up, until they ask all their questions, and we get everything answered, and then they sign.

And we have been able to dispose of the treated waste, from the tanks, and close some of those tanks, under this process. And we decrease the long term risk to the site.

Now, the next step of Section 3116 is the monitoring. Also, under Section 3116, the second part, which is 3116(b), the State and NRC, in coordination, conduct long term monitoring of those sites, and facilities, that have had the closed, or the disposed of waste.

So that is the second step. And here, as I talked about, the other previous determinations that have been done, and we are hoping for the H-Tank Farm to be completed in December of 2014.

And I wanted to step back a little bit. So I talked about that we have this Order that we follow. And then we have this Section 3116 that we follow.

But, in fact, they are very similar processes. And both WIR determination, waste

incidental to reprocessing determinations, which are done under the Order, and the waste determinations under Section 3116, use identical processes.

And I was going to say, we have done a couple of WIR determinations under 435, at New York. We haven't done any at Hanford, yet. And one was a vitifrication melter, and the other was this two process vessel tanks that fed into the vit melter.

And Hanford Tanks have started working, again, at their C Tank Farm, their performance assessment. They started the scoping process, that we talked about, where we all discuss with the public or, you know, stakeholders, all the assumptions that go into the modeling, so people know where we came from.

They actually held twelve meetings in 2009, 2010, and then funding was cut. But now the funding is back on as of this week. And so they started working on that again.

And they are going to just take all the information they had, from a few years ago, and roll it up and get it moving again. So, hopefully, we will get somewhere on those.

And I just also wanted to mention that the DOE Order is under revision, just like 10CFR Part

61 is under revision, both processes are moving along the same path, pretty much.

And due to the successes that we have had, with the Section 3116 consultation process, with the Nuclear Regulatory Commission, we are taking all the lessons learned that we can.

We are taking the lessons learned, from the current Section 3116 process, and bringing it over to the 435 evaluation process, such that we are making it very public, lots of stakeholder input.

And we are also, we didn't require consultation for that, in the past, but we are now. So under our current Order it says, it is suggested, it is recommended, that you consult with NRC.

And we had, on some of the work that we had done earlier, thinking that we were going to get closure on some of those tanks at Hanford, we actually had done that back in the '90s, right, where we had consulted with the NRC.

So even though we didn't require it, we were doing it anyway, because we decided let's just make it so. And we have decided to make it a requirement.

And, but just to mention that the Order, the revised Order, is going to be going out for

public comment. It is still under development, and under review, right now, at headquarters. But it is close.

We believe, probably, in the next three or four months it will be ready for it to go out for public comment. And that will be in the Federal Register for public comment. And we would like anybody's comments that is willing to read it.

It is not that long. I have been working on it, also, as a side part of my job. And we have gotten it down -- the current Order has kind of a general requirements, and then three chapters for each waste type, high level waste, transgenic waste, and low level waste.

But we -- they were very repetitive. So for disposal you need to make sure you characterized your waste, and you need to package it appropriately, you need to -- you know, each section had that in it.

And the new Order holds all that up in the general requirements. The general requirements is a very long section. And then once you have determined what kind of waste it is, then there are small sections for each of those. So it is a pretty quick read, actually.

Now, under the monitoring, and I think

Chris is going to mention this a little bit further, under monitoring the NRC, the DOE currently monitors our facilities, and the State monitors our facilities. And we report everything, immediately, that we find to the -- the State identifies, and tracks what they track. So the Nuclear Regulatory Commission, under Section 3116, also has a monitoring role for these facilities.

And they work in coordination with the State. And we have had, I guess you will talk about more how we have been, the NRC comes down and has monitoring observations, of our facilities, on a regular basis.

And when we do that they have a lot of questions, and we have to respond to them. And they also walk-down our facilities, and it is an excellent technical exchange.

And all of the monitoring meetings are made public. The -- not transcript, but a summary of those meetings.

And, also, let me just take it one giant step back. Under the H-Tank Farm performance assessment, one of the things that we modified, as part of our lessons learned, from working over the past several years, is it took a long time for NRC to

review the thousands of pages that we threw over the fence at them, with the performance assessment, and the waste determination basis.

And performance assessment is about an 800-plus page document, plus several thousand pages of references. So it is not an easy process to review that.

So what we have discovered, and what we have worked together, is identifying other ways that we can help speed up their process of reviewing. Because it has been kind of a data dump, and they just have to try to figure out where everything is.

So we have had eight, I can't remember how many calls we have had. We have had what we call technical clarification calls that we have, where they pick a topic, and we just run through, this is where this, you know, this page describes this, this is where we got that information, over here is this reference.

So we are going through a lot of those. And the summary of those meetings are put up on the web, on the NRC page, also. So it has all been public. There hasn't been anything done behind closed doors. Members of the public are always invited, if they wish.

And so that is, I think I did it. Yes, okay, thank you. And Chris McKenney is going to speak next, from the Nuclear Regulatory Commission.

MR. McKENNEY: So I'm going to be talking about the fact that we are sort of standing, today, on this meeting, and if you look at our overview, we are standing in the cusp.

This is where the program sort of changes. Whereas Linda said, we are in the midst of doing consultation on, effectively, the last major consultation for a very long time.

There isn't anything in the horizon, right now, with DOE that the two agencies would be consulting on, within the two states of Idaho, or South Carolina, any time soon.

So from that point, from NRC's point of view, we have been trying to see how will our program change? Because we won't be doing the consultation space, for 3116.

And, also, we have been at this for, now, a little more than six years, on consultation, on monitoring activities.

So how do we incorporate those lessons learned? How do we update everything so that it is clear what our processes are, and what our, what we

are doing?

So we have plans, over the next few years, to modify our guidance, which drives both our consultation activities, which will be used mostly in the Hanford space, and also our monitoring guidance.

So I'm going to go over the guidance structure, and the planning permits, and the general. The guidance and public involvement opportunities for those, because we are going to be putting these guidance documents out for the public, and talk to those.

So our hierarchy of our guidance is that we have a general guidance document, NRC calls of our reports, that we call it the NUREGs. But that is just a big compilation of all of our guidance, for our staff, on how do we look at all the things that are 3116?

How do we look at the removal of the highly radioactive radionuclides? How do we look at their conceptual models; how do we look at their basis for their assumptions?

And all that sort of stuff goes through there. It also has a chapter on how do we monitor under this law. However, of course, it was written in 2007. That monitoring section is really thin

because we hadn't monitored yet.

But it does still provide the general overview of the 20,000 foot level of what we do in monitoring space, you know, how we do coordination with the State, what would happen if there were to be issues that were to arise.

And under the requirements of the NDAA, if we find that the DOE is not meeting the performance objectives, as specified in the law, we are to report to Congress.

So we have a little bit of monitoring of what would be the process if that were to occur. Our real workhorses, for monitoring, are the fact that we create site-specific monitoring plans for each project.

These are based on our technical evaluations, this is why consultation actually is so important. It allows us to go through and find out what is driving the risk at this site?

Because every site is different, every site has different radionuclides, every site has, possibly, a different disposal structure, and different barriers.

So what is, where is the performance needed, and where do the questions rise with that

site? And so the monitoring plan, while they are both tank farms, the monitoring plan for Idaho National Labs, looks quite a bit different, than the Savannah River Site.

Because we have stainless steel tanks, we have carbon steel tanks, we've got humid site, versus an arid site, and so forth.

And so right now we have three monitoring plans, as we are now monitoring at three sites. And these go down into, these are the technical issues we want to deal with, that we think are important to a site, site performance.

And these are the things that we are, possibly, looking for, these are the types of information that could be addressed to either close that issue, or put it off to the side.

Now these are one for one comparisons, unfortunately, because the performance of the site can be quite complex. So we may have, we may list ten different processes, like how fast waste could move out of ground, how fast the ground could crack, how fast the -- how long will the pad underneath a tank last.

All of those issues will be listed, but maybe a very good data support for one of those

issues may close them all. Because all three of those processes are doing the same thing. They are holding up and isolating the waste, is what they are trying to do, as a barrier.

So it doesn't mean in our monitoring plan while we have a lot of different areas, it doesn't mean they have to go through, DOE has to check off every one of them, because a lot of them work together.

And so -- but our document goes through and says, we don't know how the research is going to go. Well, they could close it this way, or they could field the issue this way, or they could deal with the issue this way.

We want to have it say all of those things, especially since these projects are going to take a lot of years, and the monitoring plan becomes, for us, especially a knowledge management tool.

So that anybody entering into the program can know, these are the important issues on the thing that we are tracking.

And, similarly, as information is developed, we may revise the monitoring plans. These are living documents that we will revise based on site knowledge.

And an example of that is the Saltstone Monitoring Plan. The Saltstone Monitoring Plan was developed in 2007, on the original DA, and as Linda said, that technical analysis was based on, largely, based on an analysis that was much older than that, with some supplements right in the 2005 time period.

But, since then, they have had operations, they have gathered more data, did lab studies, actually changed the design of their structures, out in the field.

So DOE went ahead and created a new performance assessment, in 2009, and provided that to us. And we reviewed it and came out with the 2012 review.

And Larry is going to talk a little bit more about that in his talk. But for this talk, we took the findings in that to develop our new monitoring plan.

Because the new modeling had some, of the important issues we were tracking in 2007 on, almost all of them are still the most important issues. It is just that we have a little bit more precision on what is the exact issue in that complete topic.

Like we had, you know, we had an issue of wanting more data, and to get better modeling support

for the long term aspects of the ground structure. That was in the 2005, 2007 time period.

In the 2012 time period we are talking about specific things within that, exactly what is the PH of the concrete, and some other things. So it is not, instead of a huge broad topic, they have narrowed it down.

So we are in the process, right now, of issuing the revision 1 for the Saltstone Monitoring Plan. After we get done with H-Tank Farm, we are going to be merging, and coming out with our merged monitoring plan for both F and H, together.

Because as the federal facilities agreement here is there will be some moving back and forth between the tank farms, from year to year. The tank farms have largely similar issues. There are some tank-specific issues on each tank farm.

But those can all be put into the same monitoring plan. In actuality I have the same staff on both tank farms. So it merges into one tank farm, and that way we will have that.

And then, again, another point of the cusp of, always been the question about this monitoring that Congress put together with us, is that the monitoring role that Congress put together,

has no specific end date.

And so, as Linda said, INTEC, up in Idaho, is about to, as soon as they get the processing done, in the next couple of years will have moved all the tank waste out and grouted the final four tanks.

So they will have 15 tanks, sitting up there, full of grout. Well, a lot of our issues will have been closed by then. So we will still be monitoring the site, but we will have to revise the monitoring plan to show the status of that being the end state.

Because we won't be really monitoring worker protection, or anything else. We will mostly be focused on what is the groundwater monitoring showing, is there any actions related to the circular cover development nearby?

Those sort of questions, not exactly what is the composition of the grout that is being put in the tanks because, of course, that will already be known.

And, also -- sorry, on the slide you see the general plans will be being revised for the next few years. And that is important because we do have a couple drivers on that.

The Guidance was developed in 2005 to 2007, especially it was all a new process, and we have learned a lot. Not only from the public meetings but the way we put out, the way we focus on how we do the review on the technical side.

The way we use both the scoping, in those cases, but also how we use the computer models that they've developed. That wasn't really in the document, before, or how does the staff actually use that, how does the staff document that part of the review.

That needs to be added into the actual review part. But even more is, the monitoring section itself has grown, as we got lessons learned, as we had to go through activities.

You know, last April we did issue a letter of concern on the Saltstone facility, sorry, April of 2012, not April of 2013, sorry.

And we are working through that. The DOE has responded with a letter about how they are putting in, right now, the Saltstone much lower technetium than they assumed in the models.

So the current structures that they are filling are nowhere near even what they modeled. So we are comfortable with that.

And we are working, very well, together on closing the technical concerns that were also raised in the letter. And so I think that is in Mark's upcoming talk, mentions a couple of that, and the time frame of those.

But when we went to actually try to publish a letter of concern we found that the process we wrote, back in 2007, had a lot of little hiccups. So we are trying to from, you know, government red tape type point of view, we are trying to make it clearer, make it much more, make the process more realistic on how it works, and really document how we found that we had to do it to get out a letter of concern.

Or, in the future, if we had to do this, a letter to Congress. The other thing that has grown over time, that we didn't have hardly anything on the monitoring plan for was our coordination with the covered states.

We have done a lot of coordination, now, with DHEC. DHEC, we have monthly phone calls with them, we -- they are on all of our observations. We talk to them before our observations.

They read our monitoring plan and can understand what we are looking for, in case something

were to come up on, because they are on the site a lot more often than we are.

So if they were to see something, like last year when we were doing, when the DOE was pouring grout into 18 and 19, we came down here, did an observation, and DHEC was able to go, that is what you are looking for, if the grout is mounding a lot, very high, in the tanks.

And so they were looking at that for other reasons. But they knew that they could tell us if something would happen, so that we could ask for that day's video, or something like that.

So we want to clarify that. The document, as a whole, we are going to have to deal with how we are changing the regulations for low level waste.

We are about to, we have been working on modifying and updating the regulations for low level waste, over the last several years. In this, more likely, winter time period, if the Commission approves, if our top part of the Agency, the Commission, approves our proposed rule for public comment, we will be issuing it for public comment in about the January time frame.

Then we will take those public comments,

respond to them, modify the Rule, and come out with a final Rule some time in late '14, early '15.

That -- those changes will actually make modifications to performance objectives, which are cited in 3116. So, therefore, we need to revise the Guidance to be consistent with the Guidance for Part 61, and any rule changes that occur, if they do occur, because that has not been, it hasn't gone out as proposed rule, yet.

Now, it is all great, it is all wonderful. But we live under continuing resolutions, right now. And so these are not fast actions, unfortunately, because my resources I go to monitoring and consultation first.

And I'm trying to get the consultation done, so that we are not, so that we are not the hole in the tent, that we are not causing things, because getting the tanks, the most bulk waste out, is important for just risk reduction.

Now, risk reduction is not the -- the law does not have NRC to have that as a pure goal. But we understand that goal when we are trying to support that.

Our monitoring role is to look at whether it is above or below this one number, in the

performance objectives. But we do understand that, so we are trying to get that in consultation.

Also in monitoring, we are trying to do our monitoring in a timely manner. So I put my resources there, too, so that we get comments before they finish out a decision with DHEC on is tank 5 and 6 done so that it can be grouted?

We want to be there early enough in the process so that there is no effect, even if somebody does raise the question.

So all my resources, most of all my resources go to that. And until I get each tank farm consultation done, they still will do that. That is priority one.

The Guidance will then come on. Some people are like, you know, why aren't your resources going down right after your consultation? It is, like, well we now monitor a few more things.

But, also, I need to bring the whole program up to, up to its modern level. So the data is a knowledge base for the future, again. And there are lessons learned here in case other states opt in, which then all of a sudden the program will be much bigger, much longer in time.

But the, but also the use of

consultation, anyway. I will be out, thanks to the fact that the PA is starting again, we will be having a meeting out in Hanford in October, it looks like, to really kick it off. And that will be exciting to see, to get some of that work going on there.

So I did say we are doing public involvement on this, and we will, and we want it. Just about everything is a bit approximate, right now, on dates.

Because, again, -- I had my finger on that one. So right now, since I will be getting H done at the start of the year, we are thinking that we can come, that we can have a meeting, where we came up with some projected changes to modernize our general monitoring chapter, in the document.

And talk about exactly how does monitoring work, and how -- and versus how is it written in the document. And come down here and talk about that.

And that will be even prior to us actually really putting in true pen to paper, for making the changes. We want to talk to you guys before we do that, not go away and write the document, then throw it out for public comment, and then come in.

It won't be thick, we are going to have thought process, we are going to come and get proposals of how we are going to do the changes, then we are going to do the writing.

And then in the next year we will be near the final part of part 61. So I will know, again, similarly a, how do I need to change 1854 to make it go in parallel with the -- yes, I know, I don't have this. A lot of places -- so I can face everybody.

No other projector says that we have to look at the projector. But that we will be discussing the rest of the document, which is all of the performance objectives.

So the -- so those are the time periods. Now, there are ways to keep up on this, is that we do have a spot on our NRC website, which will be updated, and you will get plenty of notice for these meetings.

We will also be emailing out, we have a stent general email list that all documents come out. So you will get a notification every time we send out a document, actually.

But on WIR, not on everything. This list doesn't give you everything that the NRC puts out. But we do put out, I have an email list, just like

the old list we used to have, where you get a mailed copy of everything, now everything is by email.

That is another way you can stay informed of when are we going to be working on these things. And also for, on this, I did get, I did provide access to the various documents just to, if people are interested. Most of them are tagged on our website, too.

But those are how we are going to try to take our lessons learned, which we have discussed a little bit, and try to incorporate that and move forward. And also, in fact, take into account that, from NRC's role, we are going to be going to effectively be monitoring normally.

And while DOE is largely going to a permutation, so we are working on the paperwork. If anybody has any comments, or questions, on the first two presentations, come up to the mike, so that we can get it recorded, and introduce yourself.

MR. CLEMENTS: Tom Clements, again. Once the monitoring program is, basically, finalized and in place, how can it be modified, in the future, based on lessons learned along the way?

MR. McKENNEY: It is, again, we have our general areas that we have to look at. Those

normally don't change. We are always looking at compliance of -- we have corporate forms, objectives, within -- that are told to us by the law.

One is the long term isolation of the waste. And are the dose, if there is waste that ever gets out of the site, will the doses remain below 25 millirem, to the general public.

Is the waste protected from intruders so that if an intruder accidentally gets into it, they won't get a dose that would require medical care, basically, or anything else like that.

And worker protection is another requirement, and stability. So a different phase, when INTEC is done worker protection is pretty much not there, because their dose rates are going to be zero, and everything else.

So my monitoring plan on that part of it, my monitoring role is that DOE will be meeting that requirement, I won't have to do much activities under monitoring because the physical design of the site will be that way.

Now, when you talk about like stability, or talked about doses to the general public, those become much more technical on how we are modifying them.

We are saying, like, again where we started out with questions of what is the actual chemical characteristics of Saltstone. That was one of our monitoring areas under, in REV 0 of Saltstone.

We have modified it because of our knowledge, we have removed a number of questions, and areas, because they have been able to find data, and provide it to staff.

And we have narrowed it down to just a few things of, you know, a comparison between how could this, or the representativeness between lab studies, and field placement, and how much is technetium actually reduced.

And so they become specific issues. As model support, and through various means of getting that support through the studies, or direct measurements, or other things occur, we close those individual technical issues. And that, then, changes in scope the monitoring over time.

And so we are not, like, making huge veers off the road to make a whole new bypass, or anything like that. We are just trying to focus on those things that are important, that we don't have, that we feel we don't have good answers for, or that we have not enough model support to be able to come

to certain conclusions.

But -- so that is how we modify the monitoring plan, we are not changing it all of a sudden, and just going off into another direction. We are trying to take the knowledge we have now, and what is important to the site, what barriers are important, an continue just to focus on those.

And as the data comes in, and we can decide maybe the process changes, or maybe -- whatever. Sometimes it is barrier shift, a little bit, in focus. But we change the monitoring plan according to that, according to the safety evaluation and what is important for the site.

MR. CAMPER: Chris, I wanted to get you to clarify. I had a meeting, this afternoon, with Karen Patterson, the Governor's Advisory Council.

And, of course, Karen is quite concerned about resources, understandably. And you mentioned, in your presentation, that we are going to be providing our questions on the H-Tank Farm to you, soon.

And I was wondering if you might clarify when you think we will do that? And then to what degree we are prepared to interface with DOE, between now and, say, the end of the calendar year, as their

funding becomes more complicated, to do everything we can to get the consultation wrapped up.

MR. McKENNEY: Consultation.

MR. CAMPER: Consultation, yes.

MR. McKENNEY: And, again, either tomorrow or Monday it will be sitting on my desk, will be the request for additional information for providing back to DOE.

We are, we have completed it, we are putting it together, and it should be issued next week or so. I think next week. Maybe a couple of days. But we will meet the August 1st date.

And as part of that we, also, are having a public meeting at the end of August, on the H-Tank Farm consultation process, where we will talk through, after having, after DOE having a chance to spend some time looking at those questions.

Now, again, because as Linda mentioned, we have had a number of technical meetings and discussion, over the past several months, during this consultation process.

The questions that are going to be coming to them are largely known, because during the calls we have had statements like, well, I don't think we can deal with it on this phone call. How about you

just ask it as a question?

And they knew that that question was going to be coming. So they have been able to start already on the ground, running a bit.

After the fiscal year starts, September, after September 30th, again, H-Tank Farm is still my large priority because, honestly, on the other side is, the only other one that would become higher priority would be Saltstone if it came in.

But it is not likely to cross over at that point yet. So the first few months, of the next fiscal year, will still be, H-Tank Farm will be the highest priority.

There are a few things I have closed out, just to make sure that they got everything done on 5 and 6 before it is all closed out, because we have everything in the process for just closing that out.

But H-Tank Farm is my highest priority. And that is, again, why I wouldn't be doing Guidance, I would be doing H-Tank Farm. We are shooting for the dates we've provided DOE, and we are trying to stick with them, and we are going to make every effort to, so that we don't have a problem with that part of it.

We do have limited resources, too.

Honestly, at the start of the year, the NRC will probably be under a continuing resolution, and we will be under an hours limit for my staff, or I will have to ask my staff, these are how many hours you have, this week, to work on it, get what you have -- we have to focus on the highest priority issues, because we have to do that triage.

But when we do get it done, and we are going to get it done.

MS. SUTTORA: I probably didn't say this, when I was talking about it. So in addition to NRC is reviewing the H-Tank Farm performance assessment, the draft waste determination basis, other changes are occurring, as we learn new information.

One of the things that we have done, recently, is modified some of the modeling that was done for the Salt Waste Disposal Facility. And that, the revised model was worked very closely with the Nuclear Regulatory Commission technical staff.

And, in fact, we had a public meeting, back in January, where we discussed the specific modified parameters that would go into the model. The site has written that up in what is called the special analysis, which is it modifies those portions of the performance assessment that it changes.

So when a site gets new information, and it is not enough new information to do a whole new performance assessment, but it has some significance, the site will do a special analysis.

And when a special analysis is significant enough, that low level waste group, the L-FROG, will do a review of those changes to make sure that, you know, there is enough technical support, and they have provided enough information.

And that we have actually put together an L-FROG review team for that special analysis. And that review team is actually currently undergoing the review.

And we are expecting to be done in early August. And what we did for that review, because the only thing that changed was certain parts of the model, but the rest of the assumptions that went into the original performance assessment were the same, we approached the guys who did the original review, that did the modeling portion of the performance assessment review, and asked them to come back and just do that special analysis review.

And two of them had retired. And I had to beg and plead to get them back to be part of the team. And -- but because -- and they were willing to

do that. They said it was such an interesting performance assessment to review that they were very excited, actually, to review the special analysis.

So that is ongoing now. And that is what Chris was referring to, is the Saltstone changes, that those are the changes that he is discussing.

So we have been looking, very closely, and it is directly in response to the letter of concern that we received last year. We are working very closely to answer all those questions, and in order to answer them appropriately we had to modify the model.

FACILITATOR GILBERTSON: Any other questions?

MR. WOLFE: Clint Wolfe, with CNTA. I was just curious about the extent to which the criteria, that we are talking about here, are codified in a rigorous manner, versus how much room is there for collaborative adjustment of what we are looking for in these performance assessments, and otherwise. Or does it depend on the situation?

MS. SUTTORA: I'm not sure I understand the question.

MR. WOLFE: Okay, the question is really more about, when we go to a new Order, a NUREG, and

find all the criteria that you are working to, say, in a performance assessment?

Or is there room for modification --

MS. SUTTORA: So, yes.

MR. WOLFE: -- of that?

MS. SUTTORA: So the Nuclear Regulatory Commission has a NUREG specifically on how to do a performance assessment that is in NUREG 1573.

And then the Department of Energy has developed extensive guidance, for our facilities, on how to do a performance assessment. And that is located on our webpage under our Environmental Management webpage under the, I think it is the compliance page.

And -- but our -- we also have what we call a performance assessment community practice, and we share best practices. So it is not codified. It really is specific to the site, but we identify what we have to do to do a good one.

And the primary thing is to identify the natural and man-made barriers for the waste to be released. So if you identify, if you are doing a disposal in cement, so it is how quickly does the cement degrade, what kind of radionuclides are involved, and how will they be released?

For example, are they highly soluble and water was able to infiltrate, and the water was able to carry off a solid radionuclide that is a technetium, or iodine.

So we do very complex analysis of how those radionuclides move through the system.

MR. WOLFE: I'm just wondering if there is any room for taking a standard that says, there shall be no more than 10 MR exposure to somebody at the boundary of this facility --

MS. SUTTORA: Well, those --

MR. WOLFE: -- versus --

MS. SUTTORA: -- are performance objectives.

MR. WOLFE: Okay. But versus saying, you know really, we can save 50 million dollars if we make that 20 MR.

MR. McKENNEY: Right. In that case, yes, the performance objectives, which, which the Congress put as what we, what NRC is to monitor to, are written down in our rules, which was done by the Procedures Act.

So it is in the regulations, not in a guidance document, or Order. It establishes that the 25 millirem per year dose limit to the general

public. So that one is there.

I mean, there is other ones that we have had discussions with the Department of Energy before, and the State was involved in it, too.

MR. WOLFE: Okay.

MR. McKENNEY: Which was where does that apply? And some other assumptions like protection intruder. Can you actually, could somebody actually drill through the, drill through a tank?

And, you know, in the end we agreed with the Department that that is highly unlikely in South Carolina. So while they did that analysis, that was not the analysis we used for comparison.

MR. WOLFE: Okay.

MR. McKENNEY: So because that sort of scenario was not there. When you are talking about the rules themselves, like the dose and stuff, those are codified, so there aren't room to move.

There is a lot more of being able to be reasonable and take discussions of what is the scenarios, how could this thing degrade, where is the receptor? Those things have been discussed before in various scoping meetings, and things like that.

MR. WOLFE: Okay.

MR. McKENNEY: And we try to take those

into account.

MR. WOLFE: Yes. I just think that it is important that with budgets being what they are, and what they look like they might be, that we just take a good hard look at the criteria, and what it costs what might be a marginal increase in a safety margin, if you will.

MS. DICKERT: For those of you who don't know me, I'm Ginger Dickert, and although I work for the Savannah River Remediation, today I'm here speaking on behalf of the Energy Facility Contractors EFCOG, Waste Management Operations Group.

And so that encompasses contractors across the entire DOE-EM complex. And we have working groups that work in particular areas, to work on common issues that all the contractors are seeing are common needs that the contractors have.

And the group that I'm representing today is the EFCOG Waste Management Operating Group. And it is my pleasure to talk to you about some of the work that has occurred as a result of that waste management group.

But this year, at the Waste Management 2013 Conference, we had an imbedded theme that ran throughout the conference, around the waste

incidental to reprocessing, both under the 435.1 Order and the NDAA Section 3116 process.

It was a first of a kind, for the Waste Management Conference, to have an imbedded theme. Conferences have tracks that look at high level waste, low level waste.

But when we looked at what does it really mean to do a waste incidental to reprocessing, or a waste determination, it doesn't fit just in one of those tracks.

Because if we are going to be successful the case has to be built from the very beginning, and cross-cuts all of those tracks.

And so it was recognized as something that was going to touch every part of the business, and every part of the conference.

It was done to recognize the importance of the progress, and moving forward, in the DOE clean-up mission, that we can't move forward.

Our basic way of looking at this is, this process says, when is something clean enough? When is a tank clean enough, when is the facility clean enough, when is the actual waste itself, clean enough to where you are able to move forward with a closure, or a disposition decision.

And if we are going to make progress in the high level waste world, this is so integral to every decision that is made, and so important to long term decisions, which are very hard to reverse.

And that there was now enough experience to where we could look at the lessons learned that could be applied across the entire complex, and look at this very important process that had occurred.

It involved participation from many different sites. It is not just Savannah River, it involved participation from the West Valley Demonstration Project, the Idaho National Laboratory, the various factions within the Hanford site, both RL and ORP, and DOE-EM headquarters personnel.

It involved personnel at all levels within the organizations, the practitioners, the engineers, the operations personnel, that are actually working the issues in the field.

Personnel that are preparing the performance assessments, the regulators, stakeholders, like those of you here in the room, and the policymakers, who were setting the policies at the higher level.

It allowed us to have collaborative integration of all of those groups, in a setting

outside of our normal workplace, where folks could be -- could set aside some of those issues, and talk openly about what we were learning, and sharing our experiences.

I want to acknowledge a few folks, here, that had a very key role in the Savannah River portion of this. Not to say that there were not others from other sites, because there were.

But for this community to let me acknowledge some of those. The Chairman of the Waste Management Corps of Engineers, Sonny Goldston, in the DOE-EM Headquarters, Mark Gilbertson, very actively supported, served on panels for us, Bill Levitan, Linda Suttora, and the list goes on.

But these were a few people who were very key in there. For DOE Savannah River, Dave Moody, Terry Spears, and Sherri Ross. And, again, there were a number of others who supported, that these were very key in participating, and in supporting the participation of their organizations and of the contractor organizations, in making this lessons learned process a reality.

For the NRC, Larry Camper and Chris McKenney. Larry not only supported, from an NRC standpoint, with his personnel attending and making

many presentations, and his participation on the panel.

But he also is on the Board of Directors for other Waste Management Symposium, and provided a lot of support, for us, to be able to do this first of a kind activity, throughout the Waste Management Conference.

We also had regulatory participation. And I'm going to apologize, right now, to Karen Patterson, whose name should be on here as well, from the Governor's Nuclear Advisory Council, Shelley Wilson from the Department of Health and Environmental Control, and Rob Pope, from our Regional EPA office.

And I do want to acknowledge two other folks from SRR, John Tseng, and Steve Thomas, who were key in helping put together all the sessions that occurred throughout the conference.

Because we were looking to cover the entire cradle to grave nature of it, is why it became an imbedded theme.

So far we have talked about the paperwork process that occurs at the end to ensure the work is right. But if you don't start out, from the very beginning, beginning with the end in mind, you get to

the end and you hope you have the case, instead of having built your case all along.

So we recognized that from a contractor perspective it starts with initial characterization of the waste, the selection of the technologies, for retrieving the waste, or for treating the waste once retrieved.

The selection of the technologies on how we are going to sample, and characterize, what you have left. The R&D that is required to define the parameters for the long term performance of the final closed facility.

And then the actual process of closing it. Those don't happen by accident, they require a very structured approach.

And so, through the conference, we built it to look at all of those, in a very structured manner, on how all those pieces fit together.

We opened with panel discussion about policymakers, to talk about what were each of the agencies, the Department of Energy, the Nuclear Regulatory Commission, the various States, what were they looking to accomplish, and how were they going to see this process accomplish the objectives of each of those policymaking bodies.

We held a panel of discussion on the associated accomplishments that have occurred as a result of the 3116 and 435.1 processes that were used. And the significance of those accomplishments.

You know, we talk about the closure of waste tanks, and recognize that it is significant. But I'm not sure all of the public clearly understand the years of work, and the amounts of effort, and expenditures, that go into ensuring that we have got the right technologies, the right equipment, that we are protecting the personnel, as we do the work, and that we are protecting the public today, and in the future.

A very lengthy process and we wanted to capture all of the perspectives of the policymakers, and then the accomplishments, were.

Then, throughout the conference we had sessions in every single time slot, from technical, regulatory, and stakeholder involvement sessions.

Again, to look at all of the various aspects of that. And it culminated in an all day lessons learned workshop, on the last day of the conference.

Now, as an output of this, there is a document that has been issued. It is the Lessons

Learned in Management of the U.S. Department of Energy Waste Incidental to Reprocessing.

I don't think we could have made the title much longer. It is not your catchy, quick, title. It was issued in April 2013. This is a copy of it, if someone would like to look at it.

This is a website for the EFCOG organization, at which it is available. And there are slides in the back, where anyone who didn't get a copy, to ensure that you would have access to this document.

This document was, also, provided to the Department of Energy, to contain, from a contractors' perspective, it documented accomplishments, the lessons learned, and a few recommendations for some areas where we thought we could collectively continue to improve the process.

As far as accomplishments, and some of this has already been discussed, at the West Valley Demonstration Project, 435.1 Order, and the DOE manual 435.1-1.

The authorization for handling of the failed vitifrication melter, as a low level waste, was approved, as well as some processing vessels. This was done through the WIR evaluation process that

Linda talked about, through the WIR citation process.

Throughout the DOE complex we have been able to dispose of things like decontaminated tools, what we call job controlled waste, the personnel protective clothing, the personnel where, when they enter contaminated areas, things that have very, very low levels of contamination, and very, very low risk.

So that has enabled us to do that throughout the DOE complex.

Under the 3116 process, at Savannah River, it has enabled us to close two waste tanks, tanks 18 and 19, and with plans to close tanks 5 and 6, later this year. And it allows us to dispose of the decontaminated salt solution, in the Saltstone Disposal Facility.

For Idaho you have also heard about the various volume tanks, 11 waste tanks there, that have been closed through the use of this process.

This lessons learned document looks at lessons learned for DOE Order 435.1 processes, as well as the 3116 processes.

Since this meeting, today, was really about the Section 3116, I have limited my discussion, here, to the specific lessons learned and recommendations for the 3116 process.

We looked at all of these together, because the DOE 435.1 process is so similar to the 3116, and the work that is going on through the DOE Order Revision process, to make them even more in lockstep, in exactly how they are done.

And so we made sure to look at them all in a very holistic manner, and not to look at them just individually.

When we first started out with the 3116 process it was a whole new world for everyone. It was a new role for the NRC, not a regulatory role, a consultative role, a monitoring role, new terms that were very, very different, for the Department of Energy.

It was a whole new set of roles on how we are going to interact with the NRC, how we are going to interact in conjunction with the State. For the State it was a whole new role of, I've got somebody else who is in my regulatory world, and I'm not sure how I feel about that, and how I want to work.

And I heard Larry refer to it once, and I really think it was applicable, and he has heard me say this before; that we started out doing the Kabuki dance, you know? Where there was a whole lot of arm waving going on.

I don't know exactly what a Kabuki dance is, but it looks like a whole lot of arm waving, and a whole lot of noise, and no forward progress. So we started out with everybody trying to find their roles.

From there we have come a very long way to having a very effective process, having strong technical exchange. And we feel like it has come a long way.

So we are talking about a few of the key lessons learned, as we have come through that course. And, again, we look at continued opportunities for improving the process.

So some of the things that we recognized. It is really important to have clear, open, and frequent communications, not only between DOE and its regulators, and consultants, but with the stakeholders as well, so that there was a much clearer understanding of the kind of decisions that were being made.

Mr. Wolfe asked, was there ability for collaboration in the process? There is collaboration to try to determine the absolute values and assumptions that you are using.

And the scoping meeting process, where

you get all of those folks into the room, and try to talk about the various perspectives, and the various technical opinions, to define some of those assumptions that you are going to use, before all the work is done.

Doing that in a public environment, where the public can see that deliberation that occurs. Doing that with the regulators as well, so that everybody is participating, and their viewpoints are all heard, as we are defining the new assumptions up front.

Linda talked about the scoping meetings, or maybe it was -- you talked about the 12, and you talked about when it would start again, the scoping meetings that are occurring at Hanford, and that is where that process, and that was a process we developed here, to try and get more involvement, early on, and have more transparency.

Providing the DOE models that were used. And the first ones, as Linda said, all the information was given over, and everybody sorted through it, and we kind of threw stuff back and forth at each other.

It was not the most efficient and effective way to do it. What we found, then, is that

we can work together, provide the models that are used, that have shown us what we think are the most important, the most sensitive, the key parameters, those things that we need to focus on.

And allow the NRC to improve their efficiency, and effectiveness, by having that, instead of having to totally recreate it all, on their own, to do the same thing, much more effective and efficient process to do.

The rest of the document, I selected those key lessons learned because they were identified throughout all of the contractors, as key.

The document itself contains about 40 detailed lessons learned. But I thought that you, perhaps, did not want to hear me talk about every one of them.

So I picked the top three for all of the contractor sites. But, again, the other 37 are available for your reading in the document.

Key Recommendations. And here we were trying, as a contractor group, to focus on, given all the progress that we have made, and given that moving forward with other sites through the DOE Order 435.1 process, what would we recommend in the vein of continuous improvement, as areas that we see, that

would help us, as contractors, perform this scope.

And the first one, and you are going to see a theme in a few of these, the first one is to develop and define the document, the scope of consultation.

It has changed over time, it has improved over time. And what we would like not to become, as contractors, is personality-driven, but more of a defined process.

I think some of that is going to occur through the DOE Order 435.1 Revision, and that is going to help us, as contractors, too. So as that is evolving, you know, we know where it is, and we are able to efficiently execute it.

The DOE and the NRC to continue to explore methods to expedite the process. We believe in the importance of independent review. We think it is important to protect the safety of the public now, and in the future.

And we don't want to compromise either of those two. But we would encourage the continued opportunities to reduce that schedule, and allow us to accomplish the work more effectively.

As I said, before, with defining the scope of consultation, we would encourage DOE and the

NRC to work with us to define the scope of monitoring, and that is much of what Chris McKenney spoke of, so that we have more clear expectations, and understandings, and there is not confusion, as we go through, as to what is expected.

We would ask that DOE and the NRC work to define, give us a better understanding of some of the subjective terms. Terms, and this is in both of these, terms like non-compliance with the performance objectives.

That is something that if it is going to occur, it is going to occur 10,000 years from now. So what are we looking for today, as the indicators, or how are we measuring, today, what we are seeing.

So we would then know how to set up our own monitoring and information flow out to those agencies.

Some other subjective terms, reasonable assurance. Having reasonable assurance that the performance objectives are met. If I ask each person in this room what reasonable assurance means, I venture to say I would get about that many different answers.

And so trying to work collaboratively to say, how much conservatism is enough? Is it truly

bounding, or is there a reasonably conservative position, and what should that be?

How much uncertainty needs to be tolerated in the numbers? If we could define that type of thing and the term to an extent practical, what does that mean to us?

Because those make a big difference, even within the performance objectives. You know, performance objective of 25 millirem, if I've got to have a 10 percent uncertainty, versus a 20 percent uncertainty, that is vastly different in where that number, that we are calculating, might come out.

And what we need to be doing on the front end, to plan to achieve that by the time we get to the back end.

So those are the key recommendations that, as a contractor group, we provided to the Department of Energy. And, as I said, many of those are already being worked.

And we appreciate, very much, the Department's receptiveness to that report, and participation with us in developing that.

And at that point, if there are any questions I would be happy to entertain those.

MR. CAMPER: I don't have a question, as

such. But I do want to make a comment. I really want to thank you for your recognition of the support that I gave you, and Mark Gilbertson is also on the Board of Directors.

And I just want to commend you, and Sonny, and everyone involved, that week-long workshop. That was, really, well done. And I encourage those of you, in the audience, who are interested, read the report, the EFCOG management working group.

It really is an excellent document that will teach you even more than you already know about what is going on down there. It is really well done, well done.

MS. DICKERT: Any other questions?

(No response.)

FACILITATOR GILBERTSON: So I'm going to start off with a little bit different kind of intro, here.

To also let you be assured that we are not only kind of looking across our knowledge base, here, in this country, with regard to, you know, what best practices are with regard to the management of nuclear materials.

Larry and I were, earlier in this year,

were invited by the IAEA, to attend an expert's conference in Vienna, where all of -- several of the countries, from around the world, came together to share lessons learned, with regard to the remediations of sites, and with regard to response to accidents, and with regard to regulatory frameworks, on how you conduct those kind of activities.

And so we are reaching out, internationally, to understand what is going on internationally, and the international community is reaching out to us, to get our expertise, and lessons learned, to conduct these kind of activities, as we move forward.

So what do we do from a Department of Energy perspective, what are we trying to accomplish overall? So we are trying to work across sites to bring some consistency to what is happening at the individual sites.

Although there is differences, as Chris mentioned, in the environments that we are disposing of these materials, I want to make sure that everybody is taking a sound technical approach with regard to the modeling and monitoring, and approaches that they take to do this.

And that we are sharing lessons learned

across all of the sites, so the best people in the complex are involved with the processes of trying to make these determinations, overall.

And so we are sharing lessons learned. They are practical things about, you know, how do you grout piping, and how do you grout tanks? So what is the best formulation for it.

And, you know, types of models that we are using. The sophistication of our models are constantly increasing. The ways that we characterize particular materials are all things that are lessons learned, that we share, as we move forward.

And it is all being done to try to strive to bring more confidence to our decisionmaking processes, and to make sure that these materials are dispositioned in a way that protects human health and the environment overall.

So that is, you know, some of the overall reasons of why we do things across the board, in the Department, and have driven things to share these lessons learned.

Other things that we do, you know, is we focus on, from a headquarters perspective, a technical review of the documents. We are not so stuck down in the weeds that you get a second look at

it, from a headquarters perspective of somebody that has not lived it for three or four months, and has done it.

And so we give, at headquarters, and through our L-FROG reviews, a second look of eyes, and that is why it is even beneficial, with the NRC to have that third set of eyes that looks at it.

And along with you, in the public, as you are reviewing these documents, to ensure that we are doing the right things, and making the best judgement possible as we move forward with these.

Staff at headquarters, and in the field are free to raise concerns up to our level at headquarters, to try and implement changes, and get things resolved across the board.

Now, it is not set up in a process, so it is just a chain. There are many checks and balances that happen as we move through the documentation of these efforts, and go to making these decisions, so it is not a unilateral decision that is made by a field office manager.

It is not a unilateral decision that is made by somebody that is a technical person at a site, but there are many checks and balances to make sure that, from a technical perspective, we have made

the proper determination and decisions for the country.

And that goes with regard to the performance of the performance assessments, with regards to performance in the documentation to support these determinations.

But it also goes, fundamentally, to the final kind of decisions with regard to the actual disposal of the material itself, to authorize things for disposal.

And so senior management is briefed, political people are briefed, the Secretary is briefed, and we make the decisions to move forward.

You may not be quite as familiar, you know, we talk a little bit about the Idaho kind of instances. Sites are different, Chris mentioned about stainless steel tanks.

Stainless steel tanks are very different to clean out than the fundamental processes than were used out there than the carbon steel tanks.

And also the innards of the tanks are very different down here, at Savannah River, with regard to piping that exists on the inside of the tanks, than existed at the Idaho site overall.

So, you know, we are making progress

associated with it. We are learning from each site. But you will recognize, as you look to the documentation that exists in Idaho, and in Savannah River, that there are differences between how we did what we are trying -- did the closure of the tanks up in Idaho, versus at Savannah River.

You have heard a little bit about we have some tanks that are waiting. Well, you understand that -- you may not know, but at Idaho, you know, the waste that were generated were part of the -- we were dealing with the calcite process, up in Idaho, and we stopped that plan.

And so we have some material in the bottom of the tanks, the sodium bearing waste that we have to treat out there, yet. And so the technology that we picked, which is a first of a kind application out there, is a steam reforming one.

So we are working to get that plan up to speed out there. And when we do, we will treat the material, that is in that tanks, and proceed on with the grouting of those tanks and then, ultimately, to the final cover of those tanks out there.

At Savannah River, you know, I'm not going to go too much, because you guys are really intimately familiar with it, and it has been talked

about the processes that we are using here, at Savannah River, to close the individual tanks that we have, and how we are stepping through the process.

And we will talk about we are constantly evolving and improving the way that do we things. And the modeling that we are using for groundwater is much more sophisticated than when we started out modeling groundwater.

And I envision, as we move into the future, that it is going to continue to be more sophisticated as we move forward.

In my program, in another part, we have, you know, some new modeling that is coming on board with regard to, it is called the ASCEM modeling, but it is -- it gets to more visualization.

We talked about how important it is to work with stakeholders, to allow people to understand what is going. Well, we believe, as we move into the future, an important component of it is going to be allowing you to visualize this material moving through the subsurface, so you can understand exactly what is happening at each individual level.

And so that is where the future is going. So as we go and manage these materials, at Savannah River, into the future you can envision, as we move

forward, you know, your site-wide composite analysis and PA information putting into system like that, so that you can monitor the performance of those materials through the groundwater monitoring system.

And look at how things are performing. So we are kind of on that, kind of long term track, and a vision for where we wanted to go with regard to monitoring these activities.

And I think one thing to keep in mind is with regard to how we move forward, with the program itself, we are going to be here for a long time, at the Savannah River Site.

And so we are going to be monitoring, the State will be monitoring on a regular basis for a long time out into the future. So we have time to continually improve what we are doing with regard to watching these materials.

Now, as specifically we talk a little bit about, you know, the Saltstone disposal, and we talked about the PAs, and the revisions for it, you know, the letter of concern with regard to potentially reasonable assurance.

And then we talk a little bit about so this is a living kind of a process. And I think what Larry alluded to, and Chris did. So we are working

out, you know, what that kind of letter to Congress might be, and what that process might be.

Because just because there is a particular concern that is raised up, or a letter of concern, you know, for a lot of these, what it requires is more technical information gathering to alleviate that technical concern.

And so I think, as we went forward, what was mentioned was the fact that we had made some very conservative assumptions with regards to amounts of technetium that were going in, that were effectively being disposed of in materials.

And we had a lot more effective removal, you know, as we actually went down and performed processes that allowed for us the source term that actually was going to be dispositioned, is a lot less, than what we originally had planned for it to be.

So it is that kind of give and take, and communication, in an open transparent manner that I believe it is going to, you know, it is going to go on, but it is a healthy kind of dialogue between us, NRC, the State and the community.

And so we are going to strive to continue to do that, as we move forward.

You heard a little bit about it. Our lessons learned is, so we were just learning the process in the early stages of it, and didn't involve the public as much as we should have.

And so that was one of our lessons learned, and we are probably at the point, you know, just by the turnout to this meeting, where we are starting to have enough public involvement, or maybe a little bit more, because the issue is, I guess, you might reach a saturation point.

But, you know, the public involvement is important. And I think our websites, and other tools, are becoming more effective, also, in getting out information associated with the public involvement.

And so that, I think, is a really improved part of the process overall. Our documentation and references. We want to make sure that it is there for people to understand now and way into the future.

And I think that is a critical component of what we have done. And so if anybody has a chance to look at one of these documents, you will see that we are in the process of documenting a whole lot of information associated with it, so that people can

review those things.

And in the future, as we move forward, can make changes to the process, to better understand how to monitor things, and do things more efficiently.

So where our challenge is. Yes, I understand some of you heard about them this morning. You know, our challenges are, you know, continued funding and impacts of the sequestration.

The Department has a lot of important work to do for across the country, you know, keep your cards and letters going to your Congress persons, you know, about the nature of that work.

But it takes, it takes a lot of different people to communicate the importance of the work that is being performed, and the pace at what it needs to be done at.

You know, the country has a lot of tough decisions that we have. The impacts, you know, we are doing a lot of first of a kind technologies in tackling problems that haven't been tackled before.

You know, when we run into technical snags, like we did with saltwaste processing facility. the issue is, it is a very integrated system, as we move to disposition these materials.

And there is a ripple effect that happens from one area to the next. And so the delay in saltwaste processing facility startup, you know, will affect, you know the tank cleaning phase and closures, just because of what is available from what we had planned.

As we move into the future, and because some additional resources are going to be required to tackle the issues associated with that.

So kind of, in summary, I think that there has been some challenges that we have had as we, you know, moved forward with this process.

I encourage you to continue to be vocal about it. If you have concerns, if you have things that you think need to be improved, you know, both the Department of Energy as well as the NRC is very open to receiving comments and suggestions, as we move into the future.

But it is a tough job that needs to be done for this country. And so we are dedicated, and I think you can tell, from the NRC's kind of dedication to getting these things reviewed, that we want to make sure that this is done, and that it is done right for the country.

So what I'm going to do, is I'm going to

let Larry go next, and then we will take questions at the end.

MR. CAMPER: Good evening, everybody. Thanks for being with us this evening. It is a pleasure to be here with you and to work, again, with our colleagues in DOE, and the State.

I would like to start off by echoing some of the things that Ginger has said it, Mark has said it, Linda said it.

We were all brought together in a very challenging way, by the legislations passed in 2005. It was different for all of us. I mean, generally you have the Department of Energy, a 30 billion dollar, very large agency, doing all kinds of things.

And, suddenly, it has an agency that is an independent regulator of 4,000, like a gnat flying around its ear, asking lots of questions. And we did have challenges, we really did.

I will tell you I have always felt that the level of dedication and professionalism, here, was tremendous. We have worked to overcome our differences in cultures, and communications, and so forth.

But now I look around, I didn't know what the audience would be. By now I look around and

realize that most of you knew this subject matter very well.

So I won't draw upon a lot of this. I was going to cover the basis for involvement and our accomplishments, of course, challenges, and the path forward.

I think by now you pretty much know the basis for our involvement. But I would point out that we talked a lot about the 2005 Act, 3116 but it is, really, about public health and safety.

I mean, that is what brought us together. But DOE is in the mission of public health and safety, and so we are we. So we are working together to protect public health and safety.

We want to enable the Department of Energy in the consultation phase to go about making the waste determinations. And then, of course, there are lessons learned along the way.

This is a dynamic thing. A gentleman, earlier, asked the question about how are you monitoring, we will in time. This is a very dynamic process, and it will continue to be a dynamic process.

Section 3116 A and B, A we consult; B we have a monitoring role. And I think the thing that I

would point out, from our perspective, I mean, we don't regulate the Department of Energy.

We have absolutely no regulatory authority, whatsoever, over the Department of Energy, around this activity that we are working together on.

But the closest thing that we do have, to what we normally do, and how we are accustomed to functioning, is what B of 3116 says, and that was assess compliance.

That is pretty much the role that we normally travel in. And so we do ask a lot of questions, and those questions are designed to assist DOE in its consultation efforts, for waste determinations.

But we also have a monitoring role to assess compliance. And we will be here, doing this, for a very long time, working with the Department of Energy and the State, to assess compliance.

So we took that very seriously, and we have asked a lot of challenging questions as a result of that.

This is an interesting -- this slide has four performance objectives in it. But every time I look at this, and when I first read the Act, the thing that I was struck by then, and continue to be

struck by, is -- and the gentleman earlier, again he is gone, he asked a very interesting question, about what standards are being brought to bear here.

The standards that are brought to bear were the cleanup effort of the Cold War legacy waste, including large quantities of plutonium, is the standard that exists in Part 61, for a low level waste commercial disposal facility.

And for 61.41, that is 25 millirem whole body exposure, 75 millirem to the thyroid, or 25 millirem to any organ of the body and, of course, ALARA, as low as reasonably achievable.

Folks, that is a conservative standard being brought to bear by Congress, on what is taking place here.

Now, if you are a member of the public, and you are concerned about these types of things, as well most are and should be, that is a good thing. We like for the number to be conservative.

But I'm just trying to put it in perspective, as to what the standard is, that is being brought to bear, as the Department of Energy goes about this remediation, and we go about our review.

We do evaluate the standard at 100 meters

from the tank farm boundary for a period of 10,000 years. There is no period of compliance in Part 61. So what we did was we brought to bear the information that we had in our NUREG 1573, which is performance assessment for low level waste disposal facilities.

And that is what we, in conjunction with the Department of Energy, determined that that would be the period of compliance for this particular process that we are using here.

In terms of the implementation of our responsibility, we did put in place NUREG 1854, Chris talked about that quite a bit, I won't belabor that.

I mentioned that we do not regulate the Department of Energy. We have gotten a lot of comments. This process, as Linda pointed out, has increasingly been a process subscribing to public input.

We have, both agencies, have interface with the Governor's Advisory Council, that Karen chairs, to provide information, and answer questions. And it has been dynamic.

Chris mentioned that we are going to be updating the document in the near future. So it will continue to be a process that will gather public

input, and chain.

There are some notification letters that are involved. Mark, in his comments, pointed out the challenges around these. The first three, you see there, I, II, and III, deal with non-compliance, or is there non-compliance, and to what degree is there non-compliance.

Category IV is a letter of concern. We did provide a letter of concern to the Department of Energy. Mark commented about that. I will talk about that just a bit more.

And then type V is a letter of resolution, with regards to any letters of concern that is issued. And then you see at what level, those types of things need to be signed.

With regards to the type IV Letter of Concern, we did provide a Letter of Concern in April of 2012, indicating that we could not get to the point that we had reasonable assurance that the performance objectives would, in fact, be met. We weren't for certain.

We could not reach that position of reasonable assurance. We weren't saying that they wouldn't. We were saying that we couldn't reach a reasonable assurance that they wouldn't be.

And so we wrote the letter, and we also discussed that in the TER, for the updated performance assessment for Saltstone. But we made it a point, in that letter, to put that in context.

I was certainly very concerned, in meeting with the staff, that we were at a point where we were not going to be able to meet the reasonable assurance. That is a very serious thing in my mind.

But in talking with the staff, you know, we talked about what is the dose? And so we decided that we would put some indication, in the letter, that the dose was on the order of one mSv, or 100 millirem per year, which is, in fact the public dose limit that is set forth in Part 20 of our regulations.

And that is the dose that if it is allowed to a member of the public from a licensed operation. So, in other words, while it was exceeding the 25 millirem, and the 75, and the 25 millirem, but in particular the 25 whole life, it was at a point that it was close to the dose limit for a member of the public from operations.

So we hoped that that would, you know, reduce some of the alarm, and put the actual parameters within context.

DOE then responded, subsequently, in July of 2012 by providing us with additional information regarding the actual technetium inventory that was anticipated from the disposal operations.

Mark pointed that in his comments, how it was determined that it was much less than was originally anticipated.

And that is terribly important because on a serology note, technetium is a very challenging isotope, in the short term, because it is a highly mobile radionuclide, and it is a great dose contributor, therefore.

So with the reduction in the technetium inventory, that made quite a bit of an impression upon our concerns. We then, subsequently, sent an acknowledgement letter, in August, indicating that if, in fact, the technetium inventories are lower, as you have indicated, then we find that that is most likely that will result in the dose standard being satisfied.

It was a letter of acknowledgement, not a letter of resolution. The movement, and the action, the activities that would hopefully lead to a letter of resolution, eventually, are ongoing.

The Department of Energy, in other words,

is still gathering information, still conducting analyses. They are working toward what they hope will be a level of information, and detail, that will satisfy us, and we can then, in turn, provide the letter of resolution.

But a number of observations, public meetings have been held since August, and as I said, we have been provided with additional information, and the additional analyses ongoing.

So it is always fun to talk about accomplishments. And some have been under our consultation, some have been under monitoring.

But I, as I have said before, and I think it is worthy of reiterating, I think the degree to which the communication has been enhanced.

If I go back to the initial meeting between our two organizations, in around 2005, 2006, and think back to the tension that was in the room, as you know, DOE was trying to tell us what they are doing, and why.

And we are asking lots of questions, and we can't get them to understand why we have all these questions, and how we do business. I mean, the tension was palpable, it really was.

And, frankly, working with my

counterparts in DOE, overtime, as well as Chris and the other managers at his level, and the other staff, I mean, everybody has worked together to greatly enhance the communication and the working relationship. And I think it is in a very, very good place.

In terms of consultation, we did issue the technical evaluation for Saltstone back in 2005. We issued the TER for the F-Tank Farm, back in '11, the beginning of '12, we issued in '12.

H-Tank Farm review ongoing. Chris indicated to you when we anticipate getting the RAIs out. I was glad that he reiterated what I told Karen today, because he is very concerned about the funding, that we would work together, as well as we can, between now and the next fiscal year, and make as much happen as possible.

So thank you, Chris, for reinforcing my commitment to Karen today. The Idaho National Laboratory, we reviewed that, and issued a TEO back in 2005, of course that is not Savannah River Site, it is covered under the 2005 Act.

In terms of monitoring, a lot of monitoring activities are going on. Saltstone, of course, it is the most, because we have been working

on that the longest.

As you can see, there have been a number of observation trips to Saltstone, and a number of technical reviews. We did issue a monitoring plan back in 2007. And we have actually, also, done a TER on an updated performance assessment because of a change in tank design at Saltstone.

The Tank Farm, not quite as many observations, yet. Then, again, it was a little bit later in the process, as compared to Saltstone. But there have been activations, three technical meetings, and we did develop a monitoring plan in 2012.

Also in Idaho we have had a monitoring plan in place since 2007, and conducted a number of observations and visits out there, as well.

And then we are going to combine, and create a monitoring plan for each tank farm, and then combine them, as Chris pointed out in his comments.

We have produced reports every year, since 2007. The one for 2012 is currently in development. We are thinking about combining 2012 and 2013, because of the number of observations, and the amount of commentary have become fairly steady states, so it might be more efficient to combine

those.

And then the number that you see there, for those who might now know, is our ADAMS document system. Try ADAMS, it is incredibly user friendly.

In terms of communications, I have probably said a lot at this point in time. But the mechanics of that enhanced communication has multiple points to it.

We do have periodic management meetings, we have telephone management exchanges, as necessary. Any time we are getting ready to go out with a report, to DOE, I'm on the phone with Mark, and we are talking about what is in the report, and why, and he and his staff are asking a lot of questions.

So then extensive technical exchanges between NRC and the DOE staff. As I said before, and will say again, I think we have gained a much greater understanding and respect for our various systems.

We do face programmatic challenges. Synchronizing our respective efforts to assist the Department of Energy and satisfying its milestones at the Federal Facilities Agreement is challenging.

There is a lot of information. Linda pointed that out in her comments. We have to do a lot of review. And getting that review done

promptly, to try to stay on since with the DOE, and the FFA, and expectations of the State of South Carolina DHEC, is indeed challenging.

We need to make sure that we have the right level of detail to inform our decisions. You know, we don't want to do too much, we don't want to ask questions that are unnecessary.

We try to strive for the right level. There are cultural and procedural differences between the agencies, not that one is better or worse than the other, it is just simply different, and they are complex.

And we each have to deal with our respective protocols. Available resources. What can I say, Karen? I share your concern greatly. Mark has alluded to it. It is a tough time, it really is.

And we all are living with continuing resolutions, this Administration hasn't helped. I can only tell you that we all do the best we can with the resources that we have, and hope that in due course things will get better.

The good news, for the NRC, in terms of consultation is, and for DOE too, is that the consultation part for us ends pretty much at the end of this year.

That is a good thing. So we are left with monitoring, it doesn't require quite as many resources for monitoring. But we can certainly use more resources. Chris often reminds me of that.

Continuing with challenges. You know, going back to the question that the gentleman raised. Probably one of the most challenging has been this notion of removing the highly radioactive radionuclides to the maximum extent practical.

And, you know, that is a variable. It is a variable based on source term in a given tank, and it is a variable based upon the particular characteristics of that tank.

So it is a challenge that is not, that one can write it down in a few words and say, this is it. It is really, there is some variability in there. Assessing whether the data agrees with assumptions. DOE has to be bold, and right on point, and make some assumptions, and then collect data to verify those assumptions.

Sometimes that works as well as predicted, and sometimes it doesn't, or to some degree. That is always the case when you are making assumptions.

Then, of course, assessing whether the

Part 61 performance objectives are in fact met. I think it is, for us, as time marches on, I have always said the big concern in this entire process is will we always know, as we move into the future, and go beyond consultations, with a high degree of confidence that, in fact, those performance objectives are still being met.

Environmental data is telling, radiological data is telling, compromise of the structure is not so telling. And it is challenging, and it will be a challenge for the NRC, and DOE, for a very long time to come.

I always like to have graphics in my presentation. People get tired of seeing boring bureaucratic slides. I want pictures.

And what I'm trying to say, in this particular slide, is something that I once said in a CAB meeting. And that is, what the Department of Energy is doing with WIR, and what we are being asked to review is rocket science. It really is, it is a pretty challenging science.

And there are limits to the technology. We have agency conflicts to deal with. Public acceptance is always an issue. It is no different here, than other places.

Resource constraints and, yes, I would suggest that the standard that is brought to bear on the performance objectives is a conservative standard, especially for the type of waste strains that we are dealing with here.

We have lots of players, lots of players in the room, and that always complicates things. We have Congress, the NDAA, bringing together our two agencies.

The Federal Facilities Agreement, and the expectations, rightly so, that the State of South Carolina as carried out by DHEC. EPA is in the mix, as well as the Department of Energy and NRC.

And, of course, you have stakeholders. You have the Citizen's Advisory Board, you have the Governor's Nuclear Advisory Council. And you also have members of the public at large.

When you bring all that to bear on WIR, at the Savannah River Site, in particular, more so than the Idaho National Laboratory, because it is a different setup, it is a different set of circumstances.

But all of that, together, does create quite a Kabuki dance, and quite a set of challenges.

So I think with that we go to path

forward. And that is we want to continue to keep public health and safety as our highest priority. And I emphasized that earlier. I saw a lot of heads nodding around the room, despite the law, or consistent with the law, however you want to look at it, public health and safety is what it is all about.

We are going to continue our consultation activities and, when complete, we are going to be publishing a combined monitoring plan for the F-Tank Farm, and the H-Tank Farm.

We are going to continue to monitor activities for Saltstone, and the F-Tank Farm, and continue to coordinate monitoring activities with South Carolina DHEC, and the Environmental Protection Agency.

And, of course, we are going to continue to interact with the Citizen's Advisory Board, as well as the Governor's Nuclear Advisory Council.

And, Karen, I want to thank you again for the opportunity to get together today, and exchange information. I found it very, very useful, and I thank you for that.

So with that I will stop and we will see if we have any questions for Mark or I. Mark will go first. Any questions?

FACILITATOR GILBERTSON: Tom?

MR. CLEMENTS: Tom Clements. I just had one question. I don't know if it relates to the second bullet on slide 17, in assessing whether data agrees with the assumptions.

But if you go back to page 10, also the second bullet --

MR. CAMPER: Slide 10?

MR. CLEMENTS: Ten, yes, please. Where it says if DOE's new projected technetium 99 inventory, so my question is, how dependent on DOE's assessment of information, like radionuclide content, is the NRC? Are you doing any of your own assessing, or do you have to simply take what is given to you, from DOE with contractors? And how do you asses if that information is accurate?

MR. CAMPER: Well, I will started the answer, then I will let Chris, because he and the staff would know it more closely than I do.

But DOE is collecting that data, they are conducting analyses based upon review of that data. That information is provided to us, we review it, and we ask, through critical commentary, concerns that we might have.

Now, we are also down here conducting

observation visits, which lead to more questions. But the actual collection of the data, and the analysis that goes with that, is done by the DOE.

MR. CLEMENTS: I mean, how can you validate that it is correct, or that their models are correct, that they plug things in properly?

MR. McKENNEY: This is Chris McKenney. But there is a couple more things that we also did, in some areas we actually do, do perform our own research.

We have a lab, down in Texas, which is not associated with DOE, and not associated with any of DOE's contractors. And we do, do certain research on different types of processes.

Most of our research, in the Saltstone area has been around how, well actually, how immobile is technetium in the original Saltstone matrix, when it is made.

And so we do, do some research in some areas. We ask some very, like in the area of inventory. While we don't take the actual measurements, per se, we have went down to getting the actual lab reports, and talking to exactly how they not only track down the actual measurements, once they put them all in the tank, together.

But, also, the paperwork, the, the history documents that occur, which is this part of the waste came from this tank, that tank has a history of -- it came, from these dates, from the Canyons.

And the history of that waste type. So we go through and say, you know, through all the data that is available, are those consistent? And then there are other checks between not only technetium dies, but other radionuclides you can check to make sure that ratios are within common sense, and making that they are consistent.

And so we do, do that. I mean, yes, we do not do independent measurements, per se, on all of these things. And that would be quite a bit of a challenge to try to actually do that.

But we have done that, to try and track it back to the original documents, not just saying, thanks for the summary and we don't do that.

On the models side, we actually get their computer models. We get the actual running computer models that they are running for the results.

We are able to delve into them, take them apart, see did they actually put them together? Does cell A actually provide the data to cell B, and not

cell C?

And so we look through that. And then, for every assumption, we are going back again, just like we did for the, not for every assumption, but for all the important assumptions, because we run them and find out what the important things in the model.

But we go back into base documents. They refer to this document. Well, that document refers to something else for its value.

And we go back on key data points, we will go back all the way to original datas. You can see that we actually did have an RAI, in one case, where it was -- I think it is selenium, I can't remember.

There was a difference between where there was supposed to be selenium eight or aight. One letter difference, but it is a serious difference in the performance.

And so it was confusing because when you go back all the way in the data, it looked like it may be the other type. So we don't just take all the summaries and go, read through them and say that.

We are delving into the models, we are delving into the important piece of the data, and

going all the way back to primary data sources, when it is important, and when that is the only valid way.

And in addition we do, do our own research on a few, what we think is key pieces, that we can actually do within our level of funding.

MS. SUTTORA: Do you want to mention that when we are filling the tanks you actually got all the videos?

MR. McKENNEY: Yes. And then on tape side, okay, so we also watch the videos of -- well, we just watched the videos of Saltstone 2, to watch the humidity levels, we got all the data on how the temperature graphs go across on various ones, because we had questions on how hot the grout gets, as it dries.

Because that is actually important to how it acts long term. And, similarly, when we were doing an F-Tank Farm, we were down here, we looked at their chits that they pass between the trucks, that they come in with, so that they verify that they meet the specs for the grout coming in.

We watch the videos of the pouring of the tanks, because there are some -- we had a bit of research to do in the center, at the center down in Texas, that showed that the way that a mound can

actually make preferential pathways inside of a big concrete monolith.

So that we were watching for was the level of mounding that they were getting, because they were pouring from a central spot. So we were looking for that in the video, and stuff like that, because that could give us some indications.

We did a number of other things like that, that are done. And then, you know, we work with the DOE, in our monitoring plan we have prioritized the technical issues.

We have said, these are the issues that are really driving, that are driving performance. And these are the issues where additional model support would be most beneficial in the near term.

And we have, in our observation meetings, both in December for Saltstone, and in the F-Tank Farm that we just did recently, in March, we discussed their research plans, over the next few years, to show how does that mesh with the data that we think we need? Are they performing that data?

In addition, we are not limited to DOE's data. When we are looking at an important parameter, we go out and search for the relevant literature, also, to see are there any contradictory reports,

that are of similar materials?

And has DOE addressed those and said why those are not applicable, or like the material that they are actually producing.

So we are not -- we are definitely, yes, we ask a lot of those questions, because we are, like, we got this report, and how does this comport to what you assumed? And that is -- so it is a whole integrated system.

So that, you know, --

MS. DICKERT: Could I have one thought?

MR. CAMPER: Sure, please.

MS. DICKERT: Tom, also, specifically on the inventory question, during the very early monitoring visits, it is not that the NRC even just takes the lab reported data, and accepts it.

They came and did a monitoring visit around going to the Stone River National Lab, looking at the procedures, and the protocols that were used, looking at how the work was actually done, so that they would have confidence, then, that when they got the laboratory reports, that the appropriate protocols, the appropriate quality assurance, in terms of blanks, and that kind of thing, had all been done before they would even accept, you know, just

blindly a laboratory report.

So those kinds of things have been pretty extensively done.

MS. ROSS: Let me, also, say that we do the same thing at the NDAA.

MR. CAMPER: The other thing that I would point out, too, in additional to all the details that Chris gave, that from a process standpoint, even though we are in constant touch with DOE, we have maintained an arm's length relationship with regards to RAIs.

They don't see the RAIs. I mean we have technical exchanges, and those are the ones -- they do not see the RAIs, or what we provide them. The same thing holds true for DER.

So we maintain an arm's length relationship, much like our classic relationship with the licensees even though we don't regulate them. We wanted to make sure that the system was, had a lot of integrity in that regard. And we continue doing it.

MR. CLEMENTS: Just one more kind of generic question.

MR. CAMPER: Sure.

MR. CLEMENTS: Tom Clements. We are having some unusual weather today, I don't think it

has rained since --

(Laughter.)

MR. CLEMENTS: I'm kind of thrown off here. It is bizarre. But just looking at all the rain we have had. I mean, it has really rained every day for a month or so.

Have, and anybody can answer the question, has there been any different run of models about what were the assumptions, initially? Because I would never have thought we would have a spell like this.

And does it have any impact on the assumptions that were made, and the degradation models for Saltstone over time?

MR. McKENNEY: I mean, I can talk about generically.

MS. SUTTORA: Specifically? Well, one would think that the generic would be first, and then the --

MR. McKENNEY: Because of the fact that these are, in the long term, these are varied structures. There will be a cover across them, and other things like that.

Short, relatively short term rain events will have a much smaller impact, because it will have

to infiltrate down through the over ten meter, I think it is a ten meters of cover, minimum, in lots of the places.

And most of that will be diverted away, because that is what the cover is supposed to do. So that does result in a very much of a mitigated impact.

Now, but from a sensitivity point of view, we look at that. We look at what is the expected range of rainfalls. How, you know, could it get wetter within the data, the history of this area, you know, for extended periods of times, or is it drier?

Actually like one test, actually, that Hanford did, they looked at one of their covers and actually denuded it by setting it on fire, to see how it would perform over some period of time, too, just as if in a natural process.

So the models, we do look at sensitivity rain input, to infiltration input. And that is a very important parameter. Because infiltration is your driver for getting the waste out of isolation.

It either is the mover itself, or it brings in oxygen that would actually transform the waste so that the technetium would change from not

being able to move, to being able to move.

And so that becomes, conventionally, that is the thought of first let's look to see how sensitive is infiltration to the system? But a few weeks of rainfall, at this pace, is not really generally that sensitive to the whole model.

But it is definitely something. The other point of view would be a question we did raise in the F-Tank Farm. We asked, how would the water table change affect you?

Because if it rains a lot more then your water table could, potentially, move going closer to the surface. And so we raised those things, they have addressed several of them.

And although it is sort of a very hard thing to talk about, because we are talking about what is the water table today, in the future we are going to have this big cover on the site, on that area, and that is going to drop it and everything else.

MR. CLEMENTS: One reason I asked the question is because, and the old designs are different from the old type, to the new type.

MR. McKENNEY: Right.

MR. CLEMENTS: It is because leakage

involved, I guess, because of all of the rain that we have had.

FACILITATOR GILBERTSON: Any questions on the phone?

(No response.)

FACILITATOR GILBERTSON: Okay. Any other public questions?

(No response.)

FACILITATOR GILBERTSON: Thank you. I want to thank you for bearing with us over dinner, and the time, and if you think of any questions in the future also be sure to let us know. Thank you.

(Whereupon, at 7:15 p.m., the above-entitled matter was concluded.)