

CONSENT-BASED SITING PUBLIC MEETING

Holiday Inn Capitol Plaza Sacramento

300 J Street

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VERBATIM TRANSCRIPT

Mr. Jim Hamilton. Good afternoon. And for those in later time zones via webinar, good evening. Welcome, and thank you for being here today. My name is Jim Hamilton. I'm an advisor to the Department of Energy's Consent-Based Siting Team and my role here today is to help us all to have a good, open, productive conversation.

To start off we have a few housekeeping issues I want to talk about first. Emergency exits are behind you and to your left. Okay, that's that one. And then: information packets. You should have all received this when you showed up today. If anybody didn't, please raise your hand and we'll get you a copy of this. [From floor: Michelle didn't; copy is handed to her].

Inside the packet you will find a copy of today's agenda, speaker biographies, a contact sheet for further information, content for the informational posters you saw on the way in; sample themes and questions for the small-group discussion; I'll talk more about that later; an information booklet describing the Department's waste management approach which looks like this. And a meeting evaluation form.

For those on the webinar, this information is all posted on the Department's website.

The Department would very much like to hear from you today as to the design of a consent-based siting process for high-level nuclear waste. To that end, we've designed today's agenda as follows. Opening remarks by Chairman Weisenmiller. Then we'll hear from John Kotek, followed by four excellent panel members who will share their thoughts. We will then have a question-and-answer session lasting about 45 minutes and then a quick break.

Following the break we'll have small-group discussions and I'll talk more about that later. There will be a report-out session from these small-group discussions; then we'll have a public comment period and some closing remarks.

This meeting is being streamed live and a copy of this stream along with the meeting transcript will be on the Department's website shortly.

We hope to cover a good deal of information today, so I thank you all for being here and for your active interest in participation and I'll turn it over to Chairman Weisenmiller for his opening remarks. Chairman Weisenmiller.

Opening Remarks

Mr. Robert Weisenmiller, Chair to the California Energy Commission

Chairman Robert Weisenmiller, Chair of the California Energy Commission. Good evening. I'd like to welcome the public to this session tonight and I'd obviously like to thank the Department of Energy for its event here tonight. I think it's really an important topic. Certainly one which frankly needs a lot of attention.

I think one event that should be pointed out in these, the opening remarks obviously, is that this is the 30th Anniversary of Chernobyl, which certainly gets the basic message across that nuclear waste is pretty serious and I think as we go forward on stuff, first let me talk about – again, I really want to applaud the Department of Energy for basically; first, having the Blue Ribbon Commission; trying to really evolve a consensus on how to deal with these difficult issues and at the same time actually taking the Commission seriously and looking forward now on trying to implement it.

And obviously it's a very daunting challenge to basically come up with a consensus approach here. But I think the notion of reaching out to the public and starting to talk about the options is really critical. And again I leave a lot to the Department of Energy to describe in more detail the results of the Blue Ribbon Commission and also in terms of what the blueprint is for going forward, but I would note that obviously having a consent-based approach for siting future nuclear waste is really a key element. I mean certainly having an organization prepared to really move forward, in an unusual way, I mean at least again, begin breaking from the past; they're trying to find solutions and obviously funding is part of that and essentially trying to find ways to come up with some storage approaches be it interim, be it long-term, but to start moving forward, and of course, that will then force us to deal with some of the transportation issues, which are pretty daunting, frankly.

And at the same time it's a key part, I think, of the U.S. leadership in some of the international efforts to deal with safety, waste management, and nonproliferation security concerns. I would note that my governor was in D.C. attending the event on basically security and nonproliferation, and it's certainly a high item in his priorities, and thus a high item of mine.

I think in terms of looking at the challenge, again – you know, we have in California like 3,000 metric tons of spent fuel. We have it in sites ranging from Humboldt in the north down to San Onofre in the south. We have it at sites which frankly were not chosen as the place you'd want to store nuclear waste. A lot of that was done at a time when people weren't giving a lot of attention to the back-end of the fuel cycle, but just sort of assumed something would happen. And now at this point we're sort of trying to come to grips with what to do with it; where to put it. And I think in terms of – at this point I said it's pretty much at that point that it's up to the actors; we're just trying to get to move, we at the Energy Commission, are just trying to get fuel moved as fast as we can, from spent fuel pools into the casks and essentially longer-term we need a solution.

And having said that, frankly, I don't know if we're going to have a solution within decades. These sites – and again there are many of them along our coast, where certainly the California policy – coastal sites are

a valuable resource. We've tried to preserve that for a lot of uses, but certainly waste storage is not one the people had in mind. So again, trying to move them off of there is important.

Now, as I said, I'm the Chairman of the California Energy Commission; we have a bunch of responsibilities. One of those is that I'm the state's nuclear safety liaison to the NRC. And it's an area where again we've had issues with siting power plants, and let me tell you, no power plant siting is easy. So when one talks about waste siting, it's certainly, like I said, pretty much a daunting exercise.

In our efforts, what we've tried to do is to basically have a very public process; it's very transparent. A lot of that I credit back to Charlie Warren. I have to say that the Energy Commission's legislation is about 40 years old. It was signed by then Governor Reagan and was implemented by Governor Brown in his first two terms. So we've sited a lot of plants; but it's not easy – we have a very public process, which I think is part of that.

I think that the issue that all of us face in government is basically making sure that we can build and develop public trust. And that's a key part of moving forward in these areas is rebuilding public trust in this particular area. I think, certainly one of the examples I've talked to in terms of the NRC, but just to do the connection, is that the NRC is having a process now to look at decommissioning and I testified before them a couple weeks ago saying a key part of that – I looked at the Blue-Ribbon recommendations and said a key part of moving forward there too is to have a process that's really very public and also one which brings in state and local governments and the affected communities. So again that's going to be a key part of going forward on the Blue Ribbon panel's recommendations, but I think part of it at this point, part of the nudge is to say we really need the NRC to be taking a similar approach on decommissioning and using that as a way of rebuilding public trust in this area.

I think, as I said, obviously, waste storage is a distinct question; particularly long-term, from basically the decommissioning process. But I think in terms of, again, I applaud the Department of Energy for looking at coming up with an inclusive process here and certainly encourage all of you to talk about how to shape the process in a way that helps all of us in government rebuild public trust in this area. And, as I said, that will require a lot of coordination, a lot of meetings like this, with affected state and local governments and the affected community. Certainly, we can call out Indian tribes; I think again, with those of you involved in San Onofre know about the Citizens Panel there; again, we need panels like that with some sort of legal stature as part of this process and I think really engaging with the impacted communities so that they basically are willing participants in this process. And I think that's going to require coming up for those communities with some degree of financial support so that they have the ability to really understand the implications and to work through the planning.

Now obviously I should say one of the things that we at the Energy Commission have done consistently is support Senator Feinstein's legislation to try to at least move forward with a temporary storage facility. And that's one which again we put a high priority on. As we do that, we really need to start thinking through the transportation issues. One of the things which last year there was a lot of talk about how we move a lot of crude into California by rail and some of the studies I looked at – basically, people went along looking at the rail system, [they] looked at what parts of the rail system are prone to accidents; they looked at what parts of the rail system – you know, you have housing close by or you have schools or you have hospitals. So again, we're going to need to do a similar process as we start thinking through on the transportation side.

The other thing the Energy Commission has consistently done – if somehow the Department of Energy could snap its fingers and we'd have a temporary or permanent site; we have thousands and thousands of metric tons of nuclear waste around the country and the question is going to be what are the priorities on moving waste into the facilities? And we've tended to recommend giving a priority to basically places where the plants are shut down. You know, if you look, say, at comparing or contrasting Diablo Canyon to Rancho Seco. Now Rancho Seco has been closed down for a long time. The waste is still there; it's not necessarily getting a lot of public attention; on the Board level again, it's not necessarily at the top of their minds. While at, say, Diablo Canyon you have an active plan; you have a very aggressive NRC program on what to do on security for the plant that's really I'm sure at the top of the PG&E Board's mind at Diablo Canyon; so again, between the two, I'd be saying let's get the waste out of the plants that are closed down and give that some degree of priority, but again the prioritization project or how you do that is certainly going to be a key issue when we get to that, so the bottom line is it's really going to be a long haul for a lot of these issues.

And I think the storage site – I think ultimately we're going to have to have very much of a community process on transport, and that's going again require a way of getting people comfortable on where the routes we should be using. Certainly, that's a part which the Western Governors Association has been very involved in some of the transport issues around the West, and again that's another one where the Energy Commission has been active and again that's going to be – we're going to have to look sort of from basically where it is now to where we want to end up and all the steps in between, and then have processes around how to get to consensus around this; so again, we clearly applaud DOE for taking up this difficult task and we certainly thank them for having the event in California, in Sacramento, so that we can participate in; so this is an important issue for the state and certainly we're looking forward to seeing how we can help both them and their process and certainly our local governments and citizens to engage in this process. So again, thanks. [Applause].

Mr. Jim Hamilton. Thank you Mr. Chairman. Now we're going to hear from John Kotek, Acting Assistant Secretary for the Office of Nuclear Energy. John.

Mr. John Kotek, Acting Assistant Secretary for Nuclear Energy, Department of Energy. Thanks everyone, thank you for being here. Before my remarks, I think we've got a brief welcoming video from the Secretary of Energy; we've got that teed up and ready to go, so we'll hear from the Secretary of Energy first.

Dr. Ernest Moniz, U.S. Secretary of Energy. [Recorded video]. Hello, and welcome. The meeting you're taking part in today represents an important step toward resolving a challenge I've been working on for many years. Back in 2010, before I became Secretary of Energy, President Obama and Secretary Chu asked me to serve on the Blue Ribbon Commission on America's Nuclear Future and tasked the Commission with recommending a new plan for dealing with spent nuclear fuel and high-level radioactive waste. Currently, this material is stored on-site at reactors, or at DOE sites, both operating and shut down, around the country. This system of managing this material is less secure and less permanent than either an interim storage facility or a geological repository. The effort to build the repository at Yucca Mountain made clear that building a repository in a community or state that did not agree to host one was not workable. With that in mind, the Commission set out a path that we hope will enable the United States to find locations where we can store and ultimately dispose of spent fuel and high-level

waste securely and safely. Today, and at meetings occurring around the United States, we hope to hear from you about what a fair and open consent-based siting process should look like. Your input will be essential to get to the Department of Energy's future approach to seeking a community or communities that agreed to have a federal interim storage facility or repository in their area.

To be clear, the Department is not yet considering any particular locations for siting these facilities; rather, we are gathering feedback about how the process of locating such facilities should look going forward. That process will be important to removing spent fuel and high-level waste from on-site storage at nuclear plants and from DOE sites. Moving forward with a workable plan is also critical to ensuring that nuclear power remains an option for low-carbon electricity in the United States. I look forward to hearing from my colleagues about this meeting, and others occurring across the country. Again I want to thank you for coming out today to share your feedback about how a consent-based siting process should work.

Moving Forward with Consent-Based Siting

Mr. John Kotek. Great. Okay, thanks again, I'm John Kotek, the Acting Assistant Secretary for the Office of Nuclear Energy in the U.S. Department of Energy. So, the first question you might be asking yourself is why someone from the Department of Energy is talking about this issue. Well, DOE is an organization that's actually got broad responsibilities. We're the organization responsible for the nation's nuclear weapons stockpile, for funding lots of the basic science research that goes on in the U.S., and for conducting a broad range of energy research and development. We do much of our work through a system of 17 National Laboratories including several here in California: Lawrence Berkeley Labs; Stanford Linear Accelerator Center; Lawrence Livermore; Sandia California; so there's a lot of activity in the state.

Congress assigned the duty for the nuclear waste program to DOE back in 1982 under something called the Nuclear Waste Policy Act. As the Secretary said, the Administration's found the Yucca Mountain site to be unworkable, but we're committed to finding a long-term sustainable solution for managing the nation's nuclear waste. So to achieve that goal, we're developing a process to siting new nuclear waste management facilities collaboratively with states, local governments, potentially tribal governments, and we're seeking the help of you folks and all Americans who are interested in developing a consent-based approach to siting that's fair and that's reflective of the public's input. So that's why we're here today, to hear from you, and I particularly want to hear your responses and your input on a series of questions we're talking about here a little bit later.

So, with that, there we go, okay. So how did we get here? As a nation we've used nuclear technology for commercial power generation, for national defense, in the support of science and technology research. On the nuclear power side, we've used nuclear energy for decades to generate electricity. As you may know, nuclear provides about 20% of the electricity in the U.S. and about 60% of our non-greenhouse-gas-emitting energy production. But it also produces about 2,000 metric tons a year of spent nuclear fuel.

Now as was mentioned earlier, I would be remiss if I did not mention that today marks the 30th anniversary of the Chernobyl nuclear disaster, which of course resulted in tragic loss of life and really underscored the overriding importance of safety in nuclear power facility design, and construction and

operation and in regulations. And while there are significant technological differences between U.S. reactors and the type that was used at Chernobyl, reactors we use here in the U.S., like most reactors in use around the world, produce electricity by heating water into steam; steam then turns turbines to produce electricity. The source of that heat is what we call fission; it's splitting nuclear uranium into smaller isotopes which releases a lot of heat, which of course provides the power that we need to produce the steam to generate electricity, but it also produces highly radioactive materials that have to be managed effectively.

The fuel itself, the uranium I talked about looks like this – and I think we have a mockup out in the reception area here. A typical reactor fuel is 10 to 12 feet tall, about 8 to 12 inches on its side, depending on the reactor type. And you'll see between 200 and 500 of these things we call fuel assemblies in a nuclear reactor core. After about 4 to 6 years in a reactor, that fuel needs to come out, as it's considered spent. And it's at that point it's both thermally hot and radioactively hot, so it has to be cooled. So what we do is we first move it into wet storage, into a pool that look like the one here at the top left, and after the fuel has cooled for a sufficient amount of time, and as these pools fill up at commercial nuclear reactor sites across the U.S., fuel can be moved into these dry storage containers like the ones you see here. Roughly speaking, of the approximately 75,000 metric tons of spent fuel we have in the U.S., about two-thirds are still in pools and about one-third of it is in these dry storage configurations. Okay?

The Department of Energy has also generated waste. The ones I was just talking about of course are from commercial reactor operations. But in DOE, because of our roles in, for example, naval nuclear propulsion, in research and production reactor operations and in weapons programs, we've generated much waste, different types of waste form, that may be a calcine form that's turned into glass, or just spent fuel that's put into packages awaiting disposal. Those materials also need to be properly managed and disposed.

And so whether it's the commercial fuel, or the commercial reactor operations, or the work that we've done at DOE, these activities have left us with a stockpile of materials that need to be properly managed and isolated from people and the environment for millennia. Alright?

Where is this material? I don't know if you can see those dots very well on this map. Between the commercial nuclear power reactors we have in the U.S. either currently operating or shutdown, sites that have been operated as part of the Department of Energy program; you can see most of the states in the U.S. host some form of either spent nuclear fuel or high-level waste.

As was mentioned earlier, there are I think now 14 shutdown power reactor sites that are of particular interest to us in DOE as really a priority – sites that we really want to get cleared out first, and you can see from the map here these sites again are geographically spread across the United States. At many of the sites, at all of these sites that used to have a power-production reactor that's been shut down and at several of these sites, everything is gone – the reactor is gone, the turbine hall is gone, the administration building is gone, everything is gone except for the spent fuel sitting on the site. Okay? So as was mentioned earlier, one of the things we want to prioritize is clearing those sites out, so those locations can be returned, the land can be returned for other kinds of uses.

Now a solution to siting, transporting and disposing of this waste will take decades to implement so we feel we really need to act now. Why? Why now? Well, first of all, the wastes that we're talking about here

were created for our benefit, producing electricity, or for a deterrent that is benefiting for us. The taxpayer liabilities that are associated with managing these wastes are large and are growing. Right? So, for the commercial fuel, as an example, the federal government is paying out several hundred million dollars a year in settlements to the utilities that have generated this waste and they have entered into contracts with the Department of Energy where they paid us to provide a solution for this waste. We're supposed to be picking up wastes starting in 1998; that obviously has not been happening and they're suing and winning for storage costs. Right? The total liability to the taxpayer associated with the failure of the government to meet that obligation runs into the tens of millions of dollars. We'd like to see that die.

Funding to pay for the disposal of that commercial fuel has been collected. Those of you living in California probably paid into the Nuclear Waste Fund 1/10th of a cent per kilowatt-hour that was collected from nuclear-generated electricity to pay for nuclear waste disposal. That money is sitting in an account in the Treasury and totals over \$30 billion right now. Okay? The government has entered into agreements with states and has a legal obligation to accept the spent fuel. We need to provide for safe, sustainable storage and disposal now, without leaving this problem for future generations, and finally we've got the technology and the knowledge to deal with this now. So we think we need to move forward with a solution that can protect people and the environment while also allowing for the system to adapt in the face of either new information or new technical options. Alright?

Just a little bit about how we got where we are now. If you'll see from this timeline, and there's a copy you can actually read out in the lobby, but you can just see here we've been generating this material since the 1940s and 1950s. Several attempts have been made in United States to site facilities. All using a top-down, kind-of federally-driven approach within states that ultimately decided they did not want those facilities. Alright? And so as a result, we think it's time to try a different approach. An approach where we look for what we call a willing and informed host community that's willing to take on the role of hosting new either hosting or disposal facilities.

International experience sort of shows that this is the way to go. For example, whether it's Canada, Sweden, Finland, France – these are all nations that have made a good deal of progress in using what we call a consent-based siting approach. The Finns are the furthest along – they've actually got a site chosen in a community that is happy to host the facility and the location itself has been approved by their regulator and they're about to enter into construction. The other countries aren't as far along but are making good progress.

The experience of those other countries really informed the work of the Blue Ribbon Commission in the recommendation that going forward the U.S. employ the consent-based approach to siting new facilities. The core recommendations of the BRC informed this document to the right, the Administration's Strategy for how to deal with spent fuel and high-level waste in the U.S. The Administration's Strategy envisions an integrated waste management system going forward and that really is the vision that we're trying to implement here. It's for a system that includes a series of new facilities – the system could contain, for example, a pilot interim storage facility, which would initially be focused on accepting spent fuel from shutdown reactor sites, moving on to a full-scale consolidated interim storage facility, or facilities that provide greater capacity and flexibility within the waste management system.

We will need one or more permanent geologic repositories for the disposal of spent fuel and high-level radioactive waste, potentially including a repository to dispose of defense-origin waste, and of course

we'll need a transportation infrastructure to move spent fuel and high-level waste, whether it's by rail, road or barge.

The Strategy in particular calls for development of a pilot interim storage facility, as I mentioned, focused on accepting spent fuel from shutdown reactor sites, moving on to a larger consolidated storage facility – we see the benefits of doing that is that it allows for the permanent removal of spent fuel from shutdown reactor sites and allows the government to begin meeting that waste obligation that we talked about earlier; provides crucial flexibility in the system and really can help build confidence with stakeholders and the public by demonstrating our ability to move this material.

During transportation, that's been touched on little bit earlier, radioactive material needs to be, and is, safely contained in these large sealed containers like the one you see here, which are licensed by the Nuclear Regulatory Commission. While there is no state, tribal or local consent for transportation as there is for siting a facility, we certainly understand that people may be concerned about these shipments and we'll be working to be responsible to those concerns. And so what we do is we work with state, tribal and local officials to plan for and train emergency responders for these shipments and in turn state and tribal governments work with their local public safety officials to answer questions and to address concerns regarding transportation.

Of course, the end game is a geologic repository – this is the scientifically preferred approach globally for dealing with spent fuel and high-level waste. Every foreseeable approach to the nuclear fuel cycle still requires a means of disposal to ensure very long-term isolation of wastes from people and the environment. The idea here is to build what is called a mined geological repository, which involves placing carefully prepared and packaged radioactive waste in excavated tunnels, in geologic formations such as salt, hard rock or clay. And this series of barriers, both natural and engineered, will be designed to contain the waste for thousands of years.

So how do we go forward in trying to achieve that vision in establishing a consolidated and integrated nuclear waste management system? Well, we're developing a consent-based siting process to help us work collaboratively with the public, with the communities, with the stakeholders and the governments, at the local, state and tribal levels. In developing a consent-based approach, we aim to ensure safe and secure operations, build and maintain trust among stakeholders, including the public, and adapt our approach based on lessons learned.

Looking forward, we plan to conduct a consent-based siting process in multiple phases. So, the first phase is where we are now. Engaging with the public and interested parties to learn from you what elements you think are important for us to consider when designing a consent-based siting process. So what we've done is we've started with a series of five questions that we've posed to you here, and that have been published in the Federal Register. How can the Department ensure that the process for selecting a site is fair? What models of experience should we use in designing the process? Who should be involved in the process for selecting a site? What is their role? What information and resources do you think facilitate further participation and what else should be considered? And so for us, the most valuable thing we can get out of this is your input into these five questions. Alright?

You'll hear from me, you'll hear from the panelists, provide you a little food for thought for our discussions, and then we're going to break into smaller groups to engage in facilitated discussions so we

can hear your thoughts on the most important takeaways for us as we move forward with a consent-based siting process. The decisions we have today as well as input we've received through the other mechanisms you see here will feed into a summary report that we'll issue later this year for review and comment. That will then feed into the design of the consent-based siting process to serve as a framework for our interactions with states, tribes and local governments. We're also asking Congress for some funding to help states, tribes and local governments, and others study this issue for themselves; don't just take our word for it, but research elements of this challenge on your own; decide whether your community, your tribe or your state might want to play a role and then, our final step here, three, here – that will then lay the groundwork for us to go out and start working with communities and interfacing one-on-one.

So we ask for you to get involved; if you've got thoughts that occur to you after today's discussion, please send us an e-mail, the e-mail address you see here; visit the Consent-Based Siting website that's been set up; let us know whatever other information you think would be useful to you and to us as we develop a path forward for solving these challenges. So thanks for being here. Thanks for your time for listening and I look forward to hearing the discussion. [Applause].

Mr. Jim Hamilton. Thank you, Mr. Kotek. Now we're going to hear from four excellent panel members who are going to bring their own perspectives to the siting challenges. Each of them is going to offer their own thoughts on this issue and we will proceed in alphabetical order.

We've got Professor Ballard to start, from Cal State Northridge; Rochelle Becker, from the Alliance for Nuclear Responsibility; followed by Gabriel Bohnee, from the Nez Perce Tribe, and wrapping it up with Dan Stetson, from the Nicholas Endowment.

I'm not going to read their biographies; they're all in your information packet. But we are all grateful to have them here before us today. So to lead us off, I turn to Professor Ballard for opening remarks.
Professor Ballard.

Perspectives on a Consent-Based Process

Professor James Ballard, Ph.D., Professor of Sociology. Good evening, everyone. I'm going to use some terminology and shortcuts since we only have a few minutes. BRC Group: Blue Ribbon Commission; NAS is the National Academy of Sciences; DOE you know; NRC is the Nuclear Regulatory Commission. If at any time I say something that doesn't quite make sense, since I'm talking quickly, please just raise your hand and I'll stop and we'll go from there.

First off, I am going to refer to a comment out of the BRC that says the nuclear waste management program is at an impasse. And I think that's why we are here. That's why we are considering this new process of consent-based siting. But this is going to take time and effort; not only on the part of the DOE, but on the part of other stakeholders, California's Energy Board, us professors and you as the public.

Consent-based siting, or CBS, involves issues of ethics, politics, socioeconomic issues, time, technology, culture, many factors – these are typically referred to as the "social risks." And we've had lots of disagreements over these over time. But time itself is a critical factor here.

We are at the time to do something. Whether that is we choose where they are at. A site in-place, if you will. Or, to look at alternatives, like interim storage, and so on. Those are going to be some of the discussions that are going to come up in the course of this consent-based siting process. And there will be lots of discussions, as you can anticipate.

One of the cautions that one of my colleagues, actually, one of my students, remembered this little caution: that consent, once given, can be withdrawn. And time is a critical factor in that, because we can lose consent by not progressing on this process. We can lose consent in the change of an election. Or in the change of the community and its participation.

All that said, I'm going to talk about four quick issues, what I call the "4 T's". Some of them have already been mentioned. Some of them I'll reinforce.

The first one is transportation. These are critical to siting – just using the word "siting" without adding the word "transportation" seems like we're going to pick a place and then worry about it later. As we've already heard from our two previous speakers, it's critical that we think about transportation from the get-go. For example, these are highly radioactive materials; they do emit shine, or routine radiation, during transportation. That may affect, here in California, if we plot out where the shipments would go from the existing facilities in California, we would be transporting by over 5,000 schools. And that's current. That's using census data. So we have to start thinking about those issues when we plan how we are going to select these routes. The public perception of risk is already high. There's going to be an education component and both the NAS and the BRC have made some recommendations about risk management issues such as gas testing, route identification, accident prevention, emergency management; many issues that we should be able to discuss.

The second "T" of mine is terrorism, or what I call human-initiated events. Fixed facilities, which is what an interim or geologic repository is; fixed facilities have risks. So too do transportation. So those risks, when we transport, are grown because the security and maintaining that security is much more difficult. The American public is concerned about these risks; they been consistent when we talk to them in surveys about this. DOE and NRC have both studied these issues; they've changed policies – they do so usually in a *reactive* manner. Meaning something like 9/11 happens. We examine what we're doing and how we can do it better. This process needs to be more *proactive* and having the ability to predict the future. And that's *very* hard to do. But there are ways that it can be accomplished.

The NAS recommended some additional measures to enhance security, etc. Some of those should be adopted.

Number 3 are the tribal entities and some of their issues for me personally; I've been working on this with a colleague and I'm happy that Gabriel is here to talk about these issues – he wasn't the colleague I was working with. Depending upon the location of the routes; where we're going to end up with these facilities, we're talking 20 to 50 tribal entities being impacted. Those figures come out of the Yucca Mountain studies that were done. That means that we're going to have to deal with a lot of the issues.

I have five quick issues for the tribal entities that may be of importance. Things like the cultural issues, the religious impacts, the socioeconomic impacts, the environmental justice impact. And Indian nations' sovereignty. Each one of those – I could probably spend a half-hour on or more, but suffice it to say that

we have these issues and they are going to have to be dealt with if we're going to actually accomplish the CBS.

The fourth "T" is trust. And this is the most difficult one. As has been mentioned, rebuilding trust, and creating a relationship with DOE or whatever agency, is problematic. Things like acknowledging the risk or actions to build mechanisms for feedback with stakeholders; looking at the issues that were raised during WIPP or that were raised during Yucca Mountain – these are good lessons for us to bring into this. DOE does have a trust issue with many of the stakeholders, and they're going to have to deal with that.

The NAS and the BRC have some specific ideas. For example, the BRC recommended that an entity other than the DOE take over the nuclear waste program. NAS recommended that an entity other than the DOE take a look at the transportation program. These are ideas that we could address during these hearings and it would take some education to get the public to that point.

In conclusion, this presentation just attempts to build a record of some of the issues – I've talked *very* quickly. Beside public hearings like these, DOE should consider using a group of experts, external to the agency, to help articulate these issues, and in the long-term, transportation and storage; safety and security. These experts can be many people. They can also do a Red Team where they bring in these outside experts, especially those on socioeconomic issues to inform the process. These external processes could help inform this, and I've not seen anything about that in the current literature on this.

DOE is tasked with defining the parameters of CBS. But this is a difficult process. They may not be able to actually manage the wastes in the future. We don't know that, but they're taking on this task and I hope that through these comments and all of the ones that will come here today we can help them move forward. Thank you very much. [Applause].

Ms. Rochelle Becker, Executive Director of the Alliance for Nuclear Responsibility. I think that trust is a thing. Trust is a very fragile thing. It's easy to break. It's easy to lose. And it's very difficult to get back. The Blue Ribbon Commission, not to mention before, recommended a new agency. One unburdened by over a half a century of failure. We need that new agency. We want to participate. We need a permitted waste facility. But we need an agency that we can trust to begin that process.

I know that Chairman Weisenmiller was happy that this meeting is in California. But California is not going to be a waste site. There's no consent needed for waste storage in California. We know that they didn't want to site any nuclear waste facilities in sites adjacent to coastal zones. We have three or four of our facilities in seismically active coastal zones. One is still operating. Two were closed. And we would like a solution to the waste. We need a new agency.

We need an agency that doesn't promote nuclear energy, or try to find a solution to nuclear energy. Even if they have the best of intentions, you cannot trust an agency who is telling us we need to solve the problems so we can create more. It's okay if you want to continue with nuclear energy. That's for another generation to deal with, not mine, and not with those who are here in California and that they close soon and we just deal with the backend. But you can't promote nuclear energy and also find a waste site that anybody's going to trust you with.

Also, holding a meeting in California is very nice. We appreciate it. We would like to talk about transport when that's available. But we wonder why you talk about deep geologic boreholes in South Dakota, but

you're not holding any consent-based meetings in South Dakota. We wonder why Texas is about to file an application on interim storage of radioactive waste and you're not holding a meeting in Texas.

We want to trust the agency that goes forward with this process, but we need you to make some overtures that say, "We can trust you." We might like you. But we can't trust you. And these are our children and our grandchildren and future generations we're talking about.

So, is it fair? It's not fair if you don't include the possible sites that it's going to. What experience for designing it? Well, we cannot sort of have a beginning process here in California. We have a Public Utilities Commission that is a bit unwieldy, overburdened and without trust. And so last week, the first step of the Utilities and Commerce Committee was to break up the Public Utilities Commission into smaller agencies that can actually deal with the problems. Breaking up the DOE, or at least removing the waste issue from the DOE, is at least a partial solution to going forward. And you can look to California for that process.

Who should be involved in this process? Technical, independent experts. People who know about geological siting. We need to be able to know that the site that is being consented to is a safe site. Why waste a lot of time getting consent from a community if it's not going to be a safe community? Or does it not need to be safe if it's going to be interim? And what is the definition of interim? Is it the 60 to 300 years that it is in California? Because interim is not 300 years. I'm looking around and I don't think anybody in here is going to be alive in 60 years, but we sure as hell aren't going to be alive in 300 years. [Laughter].

So we need a process that we think is really going to happen. We need to talk to people who don't agree with us. We can't sit around with people who all think the same thing. We need a process for people that *don't* agree and talk to people on the other side. I think that is *very* important – that's how you move forward. You don't sit at a table where everybody always agrees with you and talk about things you already agree on.

You talk about some tough things, but you go forward with the tough issues by talking to people that don't agree with you and finding some commonality. We had a meeting about a year ago in San Diego on the waste at SONGS and I think the one thing everybody agreed on is that nobody trusted DOE. Well, it's nice to have agreement, but that's not really the point in what we've got here.

What information do we need to go forward? We need to participate when it's transportation. We are, again, uncertain why this consent-based meeting is here in California, but we welcome you to come back when you want to talk about transportation and have somewhere to send it to. Thank you very much for your time. [Applause].

Mr. Gabriel Bohnee, Director of Environmental Restoration and Waste Management. Thanks a lot. Good evening. My name is Gabriel Bohnee, and I come from the Nez Perce Tribe in Idaho. Our experiences have been with the Department of Energy having put the map for the Hanford nuclear reservation downriver of the major river, the state river, that flows right through this, to having been downstream from the Idaho calcine site. So the Nez Perce Tribe has been involved with the nuclear waste program since the inception of the Nuclear Waste Policy Act and I give a lot of respect to the elders and I give a lot of credence to them and their education for me on how we have to take a look at these issues.

As Dr. Ballard said, there are over 500 tribes and nations here in United States, each of which has its own individual government body, and that's a lot of work to have to try and go out and communicate with 500 tribes. But a big problem is that the federal government is that they try to pin us and just call us tribes and get information relating to a source that will hopefully spread out the net as far as it can. And not be able to give the choice to me individually in a true consultation, which is, you know, the policy of the Department of Energy with the American Indians to consult with us on a one-on-one basis, with our governments, and our leadership. I'm a staffer, I'm not a tribal leader, I'm not an elected leader, I don't vote, so meeting with me is not the same as meeting with my chairman.

In moving forward, I spoke on the Blue Ribbon Commission and gave information there and I tried to play the devil's advocate on how you might want to take a look at this; but say a tribe does want to accept the waste. There are challenges from the state, during the NRC processing, we need to have the power to veto this process even if the tribe is going to go through [with it] – no, we are sovereign nations and we are going to come up with our decision on how we want to move forward with how we do this.

Yet we know the federal process in that – what the process needs to be done to even advance this and we know these issues are very serious and we deal with this on a daily basis as a tribal government, and any decisions we make we have to do the groundwork, we have to work with our local groups, we have to work with our state, and local states around us, and we have to deal with the federal government.

There's misconceptions about tribal nations that we have it easy, that you're tax-free Indians, everything is free and easy for you guys. Well it is, when we deal with how processes that we have to go through [are] an extra hoop – clearly, in government classes of the federal system, the state system and your local system. Well, just add more hoops. Take all those hoops and add more hoops for us to jump through. So the task would be daunting for a nation to take on the responsibility of accepting this waste in their community.

I go back – I was just meeting with the Yakama Nation yesterday and thinking about Russell Jim from the Yakama Nation and he actually wrote in and gave comments on the Nuclear Waste Policy Act back in the late 1970s and early 1980s and he reminded me and said, "Gabe, we were in that process." And actually there was actually a consent-based kind of approach that was done in the 1980s where they were actually giving money out to study if you wanted the waste and I put an application in, but it was rejected by my leadership once they figured it out – people figured out that somebody who was closest to the waste wanted to apply, but you do need to do the research and everybody does need to have that chance to understand what the risks are and what the complexities are to each of the communities.

A good theme was transportation. If you go to any tribal meeting and you go about any part of this nation, I think tribal nations consider this Indian country, and so just thinking that you're putting a route away from what is highlighted on your map as saying that this is the next reservation, for us that's not truly who we are; if you come and visit the Nez Perce Tribe we have through our Treaty what we call "usual and customaries," so our area of influence in the Northwest is much greater than our land base that we have in Idaho. It extends from the Pacific Ocean and the resources of the Columbia River in salmon and lamprey to the buffalo in the Midwest as we were buffalo hunters and we were great businessmen and travelers and had a big influence. So the area of impact for us is much greater and if you site the location that's even in Montana or somewhere else, then the Nez Perce Tribe is going to have an issue to say about those areas; those are our sacred areas, those are areas that we've taught as our history and just using our

example, the Nez Perce, times that by 500-some nations across this country is going to be a daunting challenge to communicate well with each of these folks.

The last is trust. And now I go back to Russell Jim and he really did spearhead the fight in the 1980s as Hanford was chosen as a deep geological repository and a test hole was put into – I'm moving so fast – at a mountain on the central site, Gable Mountain, in the central part of Hanford; it was a big salt formation. Of course the site wasn't chosen and we weren't included in those processes as tribes, as you know they were going for the testing, so once the work was done, we had to go back in and say, "Hey, you really just made it a cultural site and we helped the federal government put that site back together and be whole again," so I think Dr. Ballard said he can probably talk for days on tribal issues and not just a half-hour each, but you could do it for days, so the impacts the tribes are dealing with are going to be great, are going to be many, but we need to have the appropriate levels of conversation with the tribal nations across the country.

We know it's a hard task as I sit on the State Tribal Government Working Group that works with the Office of EM [Environmental Management] at the Department of Energy, and I also sit on the Nuclear Energy Tribal Working Group in the Office of Nuclear Energy and we know the challenges of trying to get out there, and get out there to get the tribal nations to even want to come in, because each tribe is unique; like I said there are over 500; some are small, they don't all have resources or they don't have the resources to come to a meeting like this; some are small and have great resources but still won't come to a meeting like this. So these are some of the challenges that we face in trying to talk with tribal nations. Thank you. [Applause].

Mr. Daniel Stetson, Executive Director of the Nicholas Endowment. Good evening. How poignant is it that we're having this meeting tonight on the 30th anniversary of the Chernobyl disaster. I think it really, really, for me, and I'm sure for you too, underscores the importance of what we're doing here and the responsibility that's on each and every one of our shoulders that we break through the gridlock that we've had since the 1950s to do something about the spent nuclear fuel storage issue.

By the way, my name's Dan Stetson and it's an honor for me to be here this evening. For the last two years it's been my honor to serve as the Secretary on the Community Engagement Panel for the Decommissioning of the San Onofre Nuclear Power Plant. For those of you who are unaware of it, the CEP is comprised of representatives from surrounding cities and counties that includes about 17 of us; includes elected officials, public servants as well as representatives from the military, local environmental organizations, businesses and labor communities, local law enforcement, local schools and academics; we hold quarterly meetings. In addition to those, we bring experts in for different workshops.

While I'm really honored to be here this evening, my first advice, my first suggestion in terms of getting community support, would be to have these meetings in the areas that are affected such as San Onofre, so I'm disappointed that it's not there this evening, but I want to thank you John; as I understand you're coming to our next meeting, which is June 22nd, and I also want to extend an invitation to everyone here to come to that meeting so you can see how they are conducted.

Over the last two years, as Secretary, gosh, we've had some wonderful discussions but very little, if any, agreement. We've had discussions about the cask thickness, security, inspections, transportation, seismic activity, tsunamis, corrosions and more. There's only been one point that every single person agrees with

and it's obvious – get the spent fuel out of San Onofre. However, given that everybody agrees that we want it out, how can we impose, if impose is the right word, to dump our nuclear waste on another community?

Having a nuclear fuel storage site in your community; I would say that's similar to having a maximum-security prison next door. And really who wants to have something like that right next door? It goes without saying that the site must be safe for the local population and safe for the environment and the number one responsibility of our government is the safety of the population.

Regardless of where we store the fuel, technology really has to catch up and advance beyond where it is now. We really need something that we call defense-in-depth. It must include comprehensive inspections and contingency plans for every conceivable negative situation. Given human nature, we know that issues will arise and accidents will happen just like they did at WIPP. To coin what Mark Twain said, "It ain't what you don't know that gets you into trouble; it's what you think you know that just ain't so."

It's a given that we want the spent nuclear fuel out of San Onofre no matter what. However, we can't be merely dumping our problem on an unsuspecting, impoverished community that is under duress and that does not understand or have the wherewithal to understand what's really happening. There really has to be a strong value proposition for the receiving community. There should be quantifiable benefits, both economic, and otherwise, to the entire community, both now and in the foreseeable future. The benefits must be significant enough where the communities really stand in line and hopefully compete to have this storage site in their particular area. These benefits could include financial payments, local hiring preferences, community infrastructure improvements and so forth. Somehow, the value proposition must stand the test of time and a new political administration can't come in and sweep them away as perhaps they have done in the past. Regrettably, trust is a *huge* issue because the rules of the game have often been changed in the past.

After the potential sites have been identified, I really suggest that the next step is to engage the community similar to what's going on in San Onofre. I really think that the Community Engagement Panel is a model that could be used and modified for these local areas. And I think it would be great if you could somehow entice David Victor to give you some advice on how to run it. The panel must be carefully selected and really must have representatives from every segment of the community. One thing that I've noticed in the Community Engagement Panels that we have down in San Onofre is there's really very little social and economic diversity on the panel. For somehow, those that are more impoverished and are struggling with the day-to-day – we don't see them at the meetings. They're really not there. We really need to be able to reach out and get them there.

Finally, storage, transportation is of course the real concern. Transportation on our rail system needs to get better. We regularly hear of rail derailments and who wants a train rumbling through their neighborhood laden with nuclear fuel. And if you think that there's about 100 nuclear sites across the country that are building up nuclear fuel, and if you think there's only going to be a couple of places where we're going to store the fuel, that really translates into a spider web of train tracks coming to that with nuclear fuel going throughout the entire country. We really believe that the primary sites that should first be identified are those 14 that are no longer operating.

These are obviously long-term goals. The Blue Ribbon Commission estimates that the process will take at least 15 to 20 years for a deep geological site to be identified, licensed and prepared. And, for an interim site, it would take 5 to 10 years. Southern California Edison tells us that even if the site was ready *today* and we can be shipping *today*, it would be 10 years before all the fuel would be out of San Onofre. So the best we can hope for is 15 to 20 years for the removal of the nuclear storage waste out of San Onofre. Obviously, we need to get started *today*. If not us, who? If not now, when? Thank you. [Applause].

Facilitated Public Discussion with Panelists and Acting Assistant Secretary John Kotek

Mr. Jim Hamilton. Thank you Mr. Stetson and thank you all panelists. We heard issues around robust dialogue; talking to people with whom you don't always agree; the risks and complexities around engaging on this issue, whether it's a sovereign nation or a local community; the importance of economic diversity; dialogue, and that obviously trust, trust, trust, trust, and trust. So with that sort of quick little summary, we're now going to move into the question-and-answer session of today's meeting.

We've got two wireless microphones for the audience members here. If you raise your hand, we'll give you a mic. For those of you on the webinar, please submit your questions on the webinar. They will find their way to me and we'll get your questions asked and answered as soon as we can. For those in the audience, just simply identify yourself by name and affiliation, if any, and with that; again, the focus here is design of a consent-based siting process for spent nuclear fuel and high-level nuclear waste. You've got six excellent panel members who've given you their thoughts and we're open to questions and answers for 45 minutes. We'll start now. Who's going to be our first volunteer? We've got somebody right over here.

Mr. William Gloege. Thank you very much. My name is William Gloege, I'm from Santa Maria California. I'm the President of Californians for Green Nuclear Power. We're the only citizens' group supporting nuclear power. And we kind of wonder why. Because it is the biggest weapon against global warming. And I guess I'll put this in the form of a question, perhaps for the Secretary.

I would prefer that this meeting be wrapped in a background that's realistic. Talk about global warming – what a huge threat it is to humanity; talk about nuclear power being the biggest tool to use against it, providing 20% of our energy already, emission-free. There has never been a single person harmed from stored nuclear waste. And that should have been brought up, and wasn't.

We've heard nothing about fossil fuel waste, and we should have a comparison to understand the problem. Fossil fuel waste kills **millions** of people, from breathing in things, getting heart disease, lung disease, many of other things.

And finally, I heard Chernobyl mentioned quite a few times. Fifty people died at Chernobyl. And they were firemen that rushed into the nuclear reactor, very bravely, knowing they were going to die, and they put out the fire in the very core of the reactor. There is a lot of speculation about future deaths – read the UN Report on Chernobyl about those. And also, *please* read the report on Fukushima. Nobody died there from the reactor accident and nobody is expected to die from released radiation. So that's my question, why wasn't this context put around this meeting? Thank you very much.

Mr. Jim Hamilton. Mr. Kotek?

Mr. John Kotek. Regardless of how you feel about nuclear power and I'm sure we've got folks in this room who support it and folks in this room who would just prefer to see all the plants shut down, right? We've got an issue that we've got to solve with this kind of fuel that exists now; with the high-level radioactive waste that exists now, so this isn't about the future of nuclear power; we haven't looked at upsides and downsides of that as we've got to solve this nuclear waste challenge. That's the reason that we've gone with the other part of that discussion. Regardless of whether we use it or not going forward, we've got the material that we have to deal with now.

Mr. Jim Hamilton. Thanks. Other questions? We've got one here; and then one over there. And remember there's a public comment period at the end of this that's a half-hour long, so if you want to make public comments, you're free to do that then. We're looking for questions here. So, Ms. Magda?

Ms. Marni Magda. My name is Marni Magda, and I'm from Laguna Beach. I've been involved with San Onofre for five years, attending meetings. John, thank you so much for stating so clearly at the first meeting that I was in on that we must be removing this fuel away from people and environmental hazards. And I think as soon as we say that, then we can start working.

What I would want to see as I – looking at this – why we're not setting the clear standards of what a facility would be. What would it have to be. Any old person who wants to show up and say let's have one in my backyard should not be able to. There really has to be a very clear scientific standard. We made that mistake with Yucca – there are so many outside groups that are now looking at it as not even geologically safe, let alone the fact that the people in Nevada did not want it.

So I would love to really see us looking at today is setting what are the things and getting a system set up instead of saying "We don't trust," "We don't trust," "We don't trust." – we have this fuel. It has to be put in a safe place. How do we create the "no-fly zone" the "the no drone zone?" How do we make sure that it is in a place that is unlike California where there's earthquake potential everywhere? Instead of saying, "Oh, we'll all be safe," let's look at the spot and spend our time today creating the way to get the fuel moved there.

Yes it will be hazardous in travel, but the greatest hazard is what we have right now. Unprotected waste that we are not able to control. So as I looked at this and you talk about this new way of – I don't see that we need a new agency, we need to make sure though that the laws are changed to allow interim storage; the laws changed that an Administration can't change it the next time that the Administration changes, and we that we should be working hard on all of that tonight, to put those ideas out instead of all staying in this world of "don't trust" and "don't do." We have got to face that this fuel exists and it must be protected. Both Chernobyl being, as I read about it myself, when the director was asked about eight years ago when will humans be able to live here, he said, "Well, check back in 10,000 years." That was his quote.

Now I know that there are questions on that. In Fukushima we finally have coming up in 2017 the robot that will start moving the destroyed fuel into a new safer location so that the industry has invented, finally, a robot that can deal with damaged canisters. This is the kind of thing that DOE must be pushing for. We need solutions sooner, not later. So I appreciate very much that you're here tonight and hope that we will set some standards

Mr. Jim Hamilton. Did you want to ask a question at all?

Mr. John Kotek. No it's quite all right. You asked about standards, and as I was policing myself for time at the end I skipped over something on one of my slides.

Early on, one of the things that we need to do is issue preliminary siting considerations to provide a baseline for siting discussions. Alright? To just get started. For a storage facility, the Nuclear Regulatory Commission has rules and regulations that have to be met and any facility we built would have to conform to those regulations. For a disposal facility, both the Environmental Protection Agency and the NRC have roles in standard-setting and in writing regulations for a repository or a disposal facility. There are old standards that exist – generic, they're not site-specific standards that exist for repositories that we think probably need to be updated and they were – and they did issue site-specific standards for Yucca Mountain but we think we need to go back and revisit the generic standards as we look for new disposal facilities. Yes, absolutely, those are things that need to happen; we're just not at that stage yet. Thank you.

Ms. Marni Magda. I'm sorry. It is because, when Secretary Moniz said that you haven't decided on sites yet, and it's my understanding from the NEI that we have two locations right now that are very actively seeking to be consent-based, one in West Texas that would be the Ariva company, and the one in New Mexico that would be the Holtec company, and 2021 are the dates I heard and 2025 and I'm hoping that we move forward with those – Am I wrong? Are we not actively moving towards those sites?

Mr. John Kotek. There are communities, as you mentioned, that have expressed an interest in potentially hosting storage facilities. So they haven't – that's where their focus has been, not on the disposal facility. And in fact, we do expect those companies working with those communities to file license applications with the Nuclear Regulatory Commission later this year.

Those aren't DOE-sponsored. Those are private initiatives. Those are communities and companies coming to us saying, "Hey, we'd like to help you out with that challenge." There are questions about our ability to contract with companies and draw money from the Nuclear Waste Fund to pay for those services, and so there are things that need to be I think addressed; at least in the minds of those companies. Therefore, in order for an initiative like that to go forward there's an attempt by the appropriators in the Senate this year and in the Energy and Water Appropriations bill in the Senate that the Senate Appropriations Committee just passed here in the last couple of weeks to try to address that issue and so there are attempts being made to allow us to pursue that private option if that's the way we decide to go.

We're also looking at the potential for government-owned facilities, so we can get out and talk to communities about – after we finish this process, and get into discussions about potentially hosting facilities, that option might also be on the table as well. Because we're not looking at sites yet, we have not engaged in negotiations with groups yet, but it's encouraging to us that even before we've gone out looking for volunteers, there are communities out there that are expressing interest in potentially playing a role.

Mr. Jim Hamilton. To just pick up on the topic of standards and the issue around trust. I didn't know if there were other panel members who wanted to weigh in if what Mr. Kotek is saying about having to maybe revisit standards, is there a way that trust can be built into that process? Are there any panel members who want to throw in a little bit around that? Alright, I'll withdraw the question. [Laughter].

Alright, so next question, we've got one over here, and then – I'm sorry, you're next. I apologize. And then over there will be the second one. Thank you.

Ms. Marilyn Ledoux. Hello everyone. My name is Marilyn Ledoux. And I live here in the Sacramento area. I want to thank you very much for conducting the meeting here. We feel privileged to have such an esteemed group of folk in our area. We were one of the early adopters in terms of closing nuclear with our Rancho Seco facility which I believe was decommissioned or closed in 1986.

I'm addressing my question to the Secretary. You mentioned in your wrap-up to your slides that we have the technology to manage this waste. And I know that's a big subject. It would probably fill reams of paper. But could you give us a little bit of a run-through on what that technology might be?

And also where we as concerned citizens might go to look at some of that data? All these terms around radiation and isotopes and running trains through our communities is a bit scary and I think one way to help us would be to give us more information and that addresses the trust issue – the more informed we are, the more likely we would be to give you consent or to give you our very clear message that we don't give you consent to do this. But we want to be informed, either way. We're asking for more information and data, so thank you.

Mr. John Kotek. Yes, thank you, and that's an excellent comment and question. I'll just start by saying when you talk about the storage of spent fuel, and I mentioned earlier the way it's currently managed in pools at reactor sites until it's sufficiently cooled and the pools reach capacity and they move fuel into dry storage – concrete steel containers that have been evaluated and licensed by the Nuclear Regulatory Commission, and they've looked at the ability to store fuel in dry storage for decades and found that that can be done safely.

On the disposal side, what we're looking for is to develop a mined geologic repository where the combination of the waste form itself; alright, so the fuel is a ceramic uranium oxide inside of a metal tube, inside of a waste container, that will then be put into a geologic environment that has been chosen to be compatible with the waste container that you've got the fuel in. You want to find an environment where you're sure that that combination of the geology itself – so you want to pick a place that's stable, and you expect to be stable over the long-term – a combination of that geology plus the engineered, what we call the engineered barriers, the waste form and then the canisters, alright? So you have a high degree of confidence that those can survive for the millennia and remain intact for the millennia that you need to isolate the waste from people and the environment.

If you're interested in taking a deeper dive on that, I've got some really smart people in the room. I'm going to start with Bill Boyle. Bill, raise your hand. These aren't the only smart people in room, but I'm just going to pick on a couple of them. Bill can talk to you extensively about the research that we do on both waste containers and geologic media. And then is Rob Howard here somewhere? Rob is back there. Rob is another great resource to talk to about the storage configurations that we use. And then where is Melissa? Melissa Bates is right here. She works on my staff on the transportation; well, on more than just the transportation system, but either she can help you or she can get you to the right person with your questions on that.

Professor James Ballard. Just to add a little bit to this. I don't believe that the technological barriers are our issue. I think that it's the social barriers; not only the NIMBY, but the whole consent-based siting is to get consent – to get the communities to allow this to happen. To get the communities that you'll be transporting through to allow this to happen. Those aren't technological issues. Those are social issues. Being a sociologist, that's how I see the world.

But it's not necessarily the technology. It's: can we get people to agree to site these, whether it be Texas or the Dakotas, or anywhere else. And can we get the communities along the routes that we necessarily have to take to get to those communities? Can we get them to agree to this? We've seen mass protests in places like Germany. Tens of thousands of people turning out to let their consent *not* be given, and we're going to see that kind of human-initiated event. I mentioned the terrorism, but that also includes protests, and that includes sabotage; all of those human things, not necessarily the manufactured barriers, the engineered things that we can do for the waste. This is a *human* problem. And we're going to have to solve that. That's what I think consent-based siting means.

Mr. Jim Hamilton. Alright, thanks. I've got a question from the webinar I'd like to read now. And this is for any panelist to jump into. How are future generations going to give their consent to have nuclear waste in their midst? Does anybody want to think about that?

Ms. Rochelle Becker. I think one of the issues is transparency. I know that transparency was mentioned many times in the transcripts from that meeting in D.C. and the meeting in Chicago. But the problem with the nuclear industry is that because of sabotage and because of terrorism, there's a lot of things that used to be transparent, and there's a lot of documents that you used to be able to receive, that you we can no longer receive, and we *understand* why we can no longer receive them, but it also impacts the ability to trust when we can't see the documents and judge for yourself. So I don't know that there's a solution to that, but I do know that transparency and trust sort of go together. And both are difficult and the other key word, which is terrorism.

Mr. Jim Hamilton. Anybody else want to weigh in?

Professor James Ballard. I briefly touched on tribal issues, but one of those is the cultural tradition in some Native American traditions that says that consent or decisions about the future must reach *seven* generations in the future. That's an Iroquois tradition. You're going to run into that. These are folks that – their whole view, their world view, on what we're deciding, has to have long-term implications. That's not how most Americans typically think. We have a short-term risk perception. And we're worried about now as opposed to the long-term. But the Native American tribes are going to look at those kinds of things. Maybe that's the answer to the person's question as to how we can approach this and thinking in the long-term not the short-term.

Mr. Jim Hamilton. Great, thank you. I've got one over there, and then one, two here; I'm sorry – one there, one there and then you two. Got it. Alright.

Professor David Victor. Thank you very much. I'm David Victor, I'm a professor at UC San Diego, and I've become heavily involved with the Community Engagement Panel. I want to thank DOE for doing this and I also want to thank Dan Stetson for his comments about what we're trying to do with the Community

Engagement Panel around San Onofre. I wanted to ask two questions and I think they're probably both for John.

The first question is your expectation for the number of sites that might emerge from this process. It seems to me that part of the problem – part of the reason that we're in the trouble we're in with Yucca Mountain is that we had a monopoly; we had one site, so if something goes wrong, politically or technically or whatever with the site, then we're stuck. And so it seemed to be quite valuable for us to be actively encouraging multiple sites here. That would have been prohibitive in the Yucca Mountain case because of the enormous costs, but it might be more feasible here, and so I'm just wondering as this process unfolds do you have some expectation as to how many sites and is there way to actively encourage multiple sites as well as multiple transport routes?

The second and the last question I have concerns transports. Several of the panelists have raised the transport issue, and it seems like consent-based is one of those things that is like sustainable development; everybody's in favor of it because nobody really knows what it means. But clearly consent-based is not the same thing as consensus.

So the point that Rochelle made about the need for dissenting views and talking to people with whom we disagree is crucially important, even if people don't agree with the final decision, we need to have some way to know whether it's a consent-based system and we're really watching. And it seems that that is going to be particularly difficult for transport, and I know that this process is not about transport. This process is about siting. But I'm just wondering maybe John or others could talk about how you're going to read back to the communities that you're leading the sessions around the country as to what we should expect for the transport process and planning; what the timeline is for that; is that a Department of Transportation issue, is it magic, what is the process by which we're going to get some consensus on how the transport is going to unfold? Thank you.

Mr. John Kotek. Great. Thanks for that. The response to the first question is that we don't have a specific estimate in mind in terms of the numbers of communities that might step forward in part because we haven't really engaged in those conversations yet. I'll give you one example.

Our neighbors to the North, the Canadians, as they've gone through a consent-based process to try to identify communities that might be hosting a repository site, they went through a process like this and they asked for input on what factors should be considered for a consent-based process; they issued a process design; they then looked for expressions of interest from communities, not that they were willing to say "yes" on day one, but they were interested in learning more. They got more than 20 that stepped forward. They're now going through the process of whittling down and weeding out those communities that don't seem to have the right, whether it's geology or other factors; so I think they're down to eight or nine now. I don't know that we'll get to those numbers here in the U.S., but as I mentioned earlier, we've already got two that have expressed interest in hosting a storage facility before we've started asking for expressions of interest.

On the transportation question, you know that's – so first of all, just so folks know that transporting spent nuclear fuel is something that is done now, and has been done for decades, and done quite safely. And while I work in D.C., I actually live in Idaho, and work with the Idaho National Laboratory site, which for example, it plays host to spent fuel that's been brought in from other nations; it's where the Navy sends its

fuel from decommissioned submarines and fuel from decommissioned aircraft carriers, and so there is a system in place. The system involves working with, in particular, state and tribal officials on transportation protocols, development of time-of-day restrictions, route selection, shipment inspections, emergency response training; so there is a system in place that works for that.

There will of course need to be extensive interactions with state and tribal officials as we plan for a large-scale transportation effort. I'll point to Jim Williams here. Jim raise your hand. Alright, Jim is with the Western Interstate Energy Board and played a key role in helping design the system of transportation and the interfaces between the federal government and state governments for the Waste Isolation Pilot Plant, the WIPP facility, in southeastern New Mexico. There have been more than 10,000 shipments of transuranic waste down to that facility over the years, many of which came from my home state of Idaho. So, this can be done. We're going to need to build on the experience and the roadmap that Jim and his colleagues have left us with the WIPP experience to design a system that can work for spent fuel and high-level waste.

Mr. Jim Hamilton. Okay, thanks, I just want to keep track of questions here. I've got multiple ones. I want to make sure I honor them. I've got you next, alright? Then two and three, four and five. You know what? You're the first person like 10 minutes ago, so I'm going to let you go before them; I'm just trying to keep it going here. One, you're up. Sorry. Thank you.

Mr. Andrew Benson. Hi everybody, my name's Andy Benson, I'm just a member of the public.

My question relates to something Professor Ballard said which is that consent, once given, can be withdrawn. The question that brings to my mind and everyone should feel free to add their comments on this, is what happens if we reach a point many decades in the future where we've selected a community, the community has initially given its consent, all the technical experts, the NRC, whoever else is involved in the scientific reviews has said, "Yes, this is a great place," and the community has been presented with all the scientific information, they say, "We consent," then construction happens, people start filling the facility with spent fuel and then 30 years down the line, 50 years down the line, somebody comes along and changes the opinion of the community about the safety and they later decide wait, no, despite the billions of dollars you spent on studying this, and filling this facility, we no longer consent, get it out of here. What are the implications of that? Do we want the ability for consent to be withdrawn and to be open-ended into the indefinite future? Is that a reasonable way to go about it? That's my question. Thank you.

Professor James Ballard. I'm not a lawyer. I don't *want* to be a lawyer; I'm sure there's some in the room. Good for you. This is a real issue. Because – let's take Yucca Mountain as an issue. They did not want this facility built. Yet \$10 billion or so was spent on construction, jobs were created, and when I was in graduate school, at UNLV, I had the opportunity to interview some of the people in the local community about the socioeconomic impacts on this particular facility. They were all for it. Of course they were. There were jobs involved.

But consent-based siting, as it's articulated in the Blue Ribbon Commission and also in the DOE, does imply an *ethical* obligation to withdraw that consent. Whether that's halfway through the construction, halfway through the internment of the materials, or whatever. It is an ethical issue. And you have to, in

my opinion, you would have to recognize their right to withdraw that, even at a later date. Even because of circumstances changing.

For example. After the Fukushima Daiichi disaster, would people reconsider their consent? Perhaps. Because of the implications of that. I can't predict the future. I'm not going to write the contract for this. But absolutely I believe we do have an obligation to somehow allow them to withdraw their consent, and they will in however way they may; the state might withdraw the roads to the facility. However it might happen. It's very conceivable that could happen. I hope that answers your question.

Mr. Andrew Benson. Thank you.

Mr. Jim Hamilton. Mr. Stetson.

Mr. Daniel Stetson. I really think it's a question of trust, and I think San Onofre is a good example of that. In that it was never agreed that the waste would stay there and now they're stuck with it, as are many other sites. And we can't really predict the future but we know that things are going to change, and that we really can't expect that once something is going into deep storage, that we're going to move it.

Now, of course, we're hoping that we can also have some interim storage sites and that those could be something that could be much easier to move, but once it goes into deep storage, I think it would be almost impossible to move it. Thank you.

Mr. John Kotek. The Blue Ribbon Commission did look at that issue specifically. It recommended that the communities, states have the right to withdraw their consent, but that's got to end somehow. Alright? So what the BRC said was that when the license application was submitted to the regulator, that would be the time at which the states' right to back out would end, unless the regulator came up with some, you know, safety reason, why the project shouldn't go forward.

The BRC recommended that the states and the waste management organization enter into a legally enforceable contract so that the rights, obligations, benefits flowing – all parts of this activity would be crystal clear and that contract can only be broken up to a certain point, recognizing the fact that a lot of money will get invested in construction and operation of the facility that's going to be provided by you all – so that right has to terminate at some point.

Mr. Jim Hamilton. Alright, great, over here, got a question.

Mr. Harry Wang. My name is Dr. Harry Wang. I'm with the San Diego Chapter of the Physicians for Social Responsibility. The question I have is if, Mr. Kotek, you could make a comment about the relative safety of nuclear waste stored on-site versus stored in an interim facility.

Mr. John Kotek. I think when you're talking about the safety of waste in dry storage, I think the Nuclear Regulatory Commission has looked at that closely and has concluded that it can be stored safely wherever it's located. The challenge with the shutdown sites, of course, is we've got increasing number of locations where you've just got spent fuel there. And so while we think storage is being done, can be done, safely for decades at these various locations, we think there's a lot of logic behind the idea of consolidating fuel from shutdown sites into a single location because of the benefits to the taxpayer of the ability to free up land and getting these for other uses and for the other reasons I cited earlier.

Mr. Jim Hamilton. Alright, we've got in the center table here – we've got two people, so one, then two and then following that you're third, and then back to that.

Ms. Joni Arends. Good evening, my name is Joni Arends, and I'm with Concerned Citizens for Nuclear Safety based in Santa Fe, New Mexico.

I would like to say first that once the waste is on the roads, there is no consent for any of the communities along the routes. That's number one. Number two: what was learned with regard to the last time we did this consent-based siting in the late 1980s or the early 1990s with regard to the Department of Energy offering money for consent-based siting with those communities? And how has DOE integrated those lessons learned into this process?

Mr. John Kotek. To your specific question there at the end about learning from the last time, I'm assuming you're talking about the Office of the Nuclear Waste Negotiator and that experience? Yes. So, one of the things that I think was learned, certainly one of the things the Blue Ribbon Commission learned from that; for those of you who don't know, I was staffed to the Commission there and they studied this question extensively, and in fact heard from David Leroy, the gentleman from Idaho, who used to serve as the Nuclear Waste Negotiator, they went – they felt like in hindsight they required a state to provide its consent too early in the process. They didn't give enough time for states to really study the issue, see whether in fact this might be something that they were interested in doing. So we're trying to do a better job this time around of providing the information that's needed; providing opportunities for input and otherwise giving states and communities and tribes within those states the opportunity to really study this issue and decide if they really want to potentially express an interest in hosting a facility. I'd say that was probably the one thing that was top-of-the-line from that experience. At least for me.

Mr. Jim Hamilton. [To Ms. Joni Arends] Wait, you want a mic.

Ms. Joni Arends. Dr. Ballard said that, or who said that? That the BRC was recommending that the states can withdraw or the communities could withdraw at the point that the license application is submitted.

Mr. John Kotek. Right, I said that's what the BRC recommended.

Ms. Joni Arends. Right. So that doesn't give very much time considering that the BCS is in the process of preparing an application right now, so. Given the fact that there is no hearing in Texas, there is no hearing in New Mexico; it's backwards. It's a backwards process. It's – it seems like the lessons learned from the last round of this effort haven't been learned in terms of how to open up the process, to have real dialogue with communities, to have real dialogue with people along the routes.

You know I've been working on this issue for almost 30 years. In New Mexico with Los Alamos National Laboratory, with Sandia National Laboratories, with the Waste Isolation Pilot Plant; I've talked to emergency responders who have gone through the DOE training and it's been inadequate – it's not...[Interrupted].

Mr. John Kotek. Well, let me address the question that's relevant to this discussion, which is about hearings and locations. We're not *yet* at the point where we're looking for sites. We're just not there yet. There are communities and states that have taken it upon themselves to start looking at this on their own.

That's up to them. Okay? We're going around trying to hear from different parts of the country that have some experience with this issue to give us input into what should a process look like. And that's what *this* is about. Okay? And thank you for participating in that, so to the extent that you've got things – input that we should be factoring into the design of a process so that we can make sure that the dialogue that you are looking for does happen – then I'm glad you're here to give that to us tonight.

We can chat in the hallway tomorrow after this; I'd be happy to have that conversation.

Ms. Joni Arends. There's not a dialogue. I have two and a half minutes to make a comment. And to be able to address an issue that's going to be going on for millions of years and to have two and a half minutes. The ratio between that is unacceptable from, as Dr. Ballard says, from a social point of view; it's – the process needs to be larger to be able to talk about...[Interrupted],

Mr. John Kotek. Let's do this as a start – alright, so seriously, when we're done, I'll give you my card; let's talk whenever you'd like. I want to hear from you; I want to hear from other folks. I've got a team of folks here who I'd like to introduce you to who should also hear your thoughts on this if you have been working on this issue for decades, we need to hear from you. So let's start that conversation tonight, but I've got an open-door policy when it comes to this sort of thing. I want to hear your input.

Ms. Joni Arends. Thank you.

Mr. John Kotek. Thank you.

Mr. Jim Hamilton. I've got Ms. Becker, who would like to comment on that.

Ms. Rochelle Becker. Quickly, I would like to say I appreciate that you and Joni will talk, but that's not part of the record. It was very helpful for me to read the transcript from D.C., the transcript from Chicago, before I came here today so I'd know what points were brought up; what needed to be followed through, but this off-camera, off-script dialogue isn't going to be in the public record for us to be able to oversee it which is a key transparency and trust issue, so I just recommend that all – not sure it's safe to say this in the state of California, because of email problems, but all e-mails from the questioners and the DOE should be put on some site where we can all follow through independently and look at these answers.

Mr. John Kotek. To the extent that we have a conversation and what have you, and you want to get that on the record, that's fine. By all means. Send us your questions; we're receiving questions. The questions are coming in faster than we can answer them, but we're working on it. Alright? We'll ensure that the questions – that responses to questions are made public; so thanks for that, I understand about the need to build trust and we want to try and do that.

Mr. Jim Hamilton. Okay, thank you, I just wanted a time check here. I've got about 5 minutes left, and I've got three people who have been waiting for questions, so, one, two and then three, and we will see where we are after that, okay?

Ms. Jan Boudart. My name is Jan Boudart and I'm reporting from the third Coast, which is the Great Lakes. And all of the problems that have been brought up are very cogent to Chicago. But I'm not going to say that I have a question except that it was stated that the technology and the resources are available to solve this problem. And then three people were cited who – Mr. Kotek would like you to refer to, and one

of the people who has been working on the technology for this is Donna Gilmore. She is not here right now, but she is very – I think many of the people from San Onofre may know her. I actually don't. But she wrote a paper about casks and these casks are not transport-ready casks, and they're barely able to contain the radiation that is coming from the now.

In the Great Lakes we have Big [Rock] Point. Big [Rock] Point has nothing but dry casks. No fuel pool, no more reactors or anything like that. The dry casks probably are not transport-ready and there is no way to transfer this stuff inside the cask to a ready cask without a fuel pool and the fuel pool has been dismantled so I don't think the technology for getting things out of the inadequate dry casks and into a transport-ready dry cask is available.

Mr. Jim Hamilton. Just for one second please, if I may. We have people who have questions they want to ask. I know you have a lot to say; perhaps you can save that for the public comment period later on? I'm just trying to manage people's time here.

Ms. Jan Boudart. Okay, because I had five points about the technology and about whether it's ready and whether the resources are ready, and then I had two P.S.'s. One is if we're going to have this going on – I don't want to have to have corporations being the ones who apply for a permit to do this and it should be a nonprofit thing from the government and the statement that no one is harmed is not provable and it is not – that's the reason you can say no one was harmed, because nobody can prove it one way or the other on account of the NRC decided not to do the studies.

Mr. Jim Hamilton. Thank you. Mr. Brown.

Mr. Chris Brown. You've got good eyesight. I was a local organizer in Las Vegas, Nevada in opposition to Yucca Mountain in the late 1980s to the early 1990s, so I'm quite familiar with these issues. Chris Brown. I live here in Sacramento now, and work on climate and water issues. I'll try to make these really quick questions because of the time. Can you guarantee us that the process which is not under any legal requirement like NEPA, but you will provide written responses from staff to serious technical concerns that been raised here and will be raised at other sites?

Mr. John Kotek. If you're talking about technical concerns at plant sites? That's an NRC issue. Questions that we receive to the extent that they follow within our area of responsibility, we will be answering everybody on the website.

Mr. Chris Brown. And you're limit of that is – because there's a lot having to do with consent that requires people to understand the technical safety issues associated with transportation and storage.

Mr. John Kotek. Again, so we're providing technical resources; links to technical resources, through our site as well. So if there's something there that you think is not adequate or something we're missing, let us know.

Mr. Chris Brown. Okay, I will, thank you. One of the early issues in the 1980s was the language and symbolism and the issue has been raised tonight about consent that future generations – if we're to go back long into the future – will not be around to provide consent. Do you all still have an active program to figure out how to leave signs so that future folk know not to go near these places?

Mr. John Kotek. Yeah, and I know we've done work on that in the past; Bill, you might be in the best position. Let me ask you to chat with Bill afterwards. He's closest to that stuff.

Mr. Chris Brown. As a consent issue, I'd like to see that in the record.

Then, climate change. As temperatures rise, nuclear power plants are not efficient and they've even been shut down during heat waves in Europe in 2003 and you are not able to produce the power. Have you looked at the question of impacts on all nuclear waste sites with regard to rising temperatures and what that's going to do with regard to the safety of either leaving the waste where it is, putting it on the road or putting it into one site?

Mr. John Kotek. Well, I mean certainly, broadly speaking, understanding climatic conditions and how they might impact a storage or disposal facility will have to be part of evaluations that are done to make the safety case in order to get a license for a facility.

Mr. Chris Brown. But you don't have studies right now?

Mr. John Kotek. I don't have one right now, but I'm going to look at Bill or others to see if we've got anything; I don't think there's anything that we can point to on that. We're not looking at a specific site now, so.

Mr. Chris Brown. Climate change is happening over the entire globe. And finally, to answer your question to us, choosing the 30th anniversary of Chernobyl – not a great move on building trust, but having some critics and skeptics on the panel with you is something I never saw in six years of local community organizing in Las Vegas against the Yucca Mountain site. So there is a plus.

Mr. Jim Hamilton. Thank you. I've got a plan for one more question, and it's over there.

Mr. Ted Quinn. Good evening, my name is Ted Quinn and I'm a member of the Citizens Advisory Panel too for San Onofre. I wanted to commend the panel for all the aspects that you brought up – they're excellent representatives in this transparent process. And thanks to DOE.

My question has to do with the U.S. historically having leadership in nuclear science and technology. In this case, you've already shown tonight, the Assistant Secretary showed, that some other countries are taking a leadership role and I wondered if you could take 30 seconds to describe lessons learned or best practices from these other countries and consent-based siting.

Mr. John Kotek. Ted, certainly through the Blue Ribbon Commission process, we learned a lot from the French, the Canadians, the Swedes, the Finns and how they've gone about siting decisions for nuclear waste storage and disposal facilities and really the need to avoid having a top-down process was foremost and the importance of working with local governments in the U.S. constructs, state governments, to get to the point where we have a willing and informed host community. That was really something that other countries have taken a lot further down the road than we have in the U.S. in terms of the design of our waste management program. And that's the big lesson that I personally learned from other nations.

Mr. Jim. Hamilton. Alright, thank you very much audience, thank you very much panel members, excellent question-and-answer. We're going to go to a break, but before we do, I just want to give you a

sense of what's going to happen when you come back from the break in 15 minutes, so bear with me, alright?

First of all, restrooms, out the door around the corner all the way to the end. When we come back from the break we're going to go into a small-group discussion session here. Facilitated around each table – the goal of this is having you dig deeper into some of the issues you heard about today.

To help promote an equal distribution of people around the table, look on your blue packet. In the top right-hand corner you'll see a number. That number corresponds to a table number. All we ask is that you shuttle up and sit down with the same number of packet and table corresponding.

The goal here again is to explore more deeply the issues that you heard about today. There are no prescribed topics for this discussion, but there's a sheet in your information packet that might give you some ideas of how to begin a conversation. Each table will be supported by a neutral facilitator; can you raise your hands, facilitators? These people are at your service. Their goal is to help you have a productive conversation. At the end of that discussion period that lasts about 75 or 80 minutes there will be a report-back session summarizing the dialogue from each of the small-group discussions. These summaries will reflect your key issues and recommendations for the Department around the consent-based siting process. They will then be condensed into a report and will be on the Department's website shortly after this meeting.

Following the report-out period, we're going to have an opportunity for public comments. If you want to make a public comment, there's a sign-up sheet on the registration desk; please sign up so we can have an equitable distribution of time for public comments.

For those on the webinar, facilitated small-group discussions make for bad television. So we're going to pause the webinar, but we're going to reinstate it for the report-out session. So, we're going to resume the live broadcast in about 90 minutes.

We're going to break now for 15 minutes. It is 6:55. That means 7:10 PM come back please. The room will be re-arranged a little bit to allow for small-group discussions. Get a cup of coffee, get a drink of water, take a bio break. Thank you very much. We're adjourned for 15 minutes.

Small Group Discussion Summary Session

Mr. Jim Hamilton. The webinar is now live again. And I'm going to turn it over to Bill Olsen and he's going to pick up the baton for the first report-out.

Mr. Bill Olsen [Facilitator 1]. Thank you. And again, my name is Bill Olsen. And I was the facilitator for this table. They actually identified 11 different discussion points. And in that discussion, they started grouping things down into threes. So I'm going to address these three very quickly. It is a process of governments with multiple stages; then the nature of the relationship itself, and with the assumption that you now have a site – what's the stewardship?

So let me go back to the first one. The process of governance. There's a lot of layers there. One of those layers is the community itself. And within that community – that goes into local, it goes into state, it goes into tribal nations, it goes into what's the technical authority of the NRC and others who are going to have any kind of technical oversight. And how is that going to proceed? And with this group, they talked about having multiple stages. So it's not a straightforward path. So they may have milestones. You do stage I. And you get consent. And if you don't have consent, you don't move on to stage II. And so there are multiple stages; we didn't define how many; but there are several stages for that path. And each stage might – just like you have a design process, you might discover new things, emerging requirements, emerging cost considerations as well. So that's the first one. Having a clearly defined process of governance and in those stages you are identifying very specific criteria.

Ultimately, what is the nature of the relationship? And this is also the nature of the agreement itself. So, who is that – so consent of the agreement, is that a memorandum of understanding? Is that a legal document? Is that how clearly spelled out it is, and who are all the players, the stakeholders in that relationship? The community may go on to a private company, the state, agencies and that needs to be very clearly spelled out on who the players are.

Finally, the stewardship. So, you have a site. This process here – developing that – this process here getting it into writing needs to include, once the site is in place, how will it be maintained and for perpetuity. So as things change, as political will make change, how will it be managed as risk changes as well. So these are the ones that need to be defined. The stewardship and the ongoing agreement.

So with that, I'll be turning the mic over to the next team person who is coming out. [Applause].

Mr. Stuart Smith [Facilitator 2]. So like with all the groups, we got with some very complex issues and we tried to distill them down to three. My name is Stuart Smith; I'm also with Leadership Strategies. So, as you can see, I think there's six or seven lists of some detail. We tried to distill it down to a couple of things.

One is the value of leveraging existing models, especially at the community level. And people offered examples such as the Quincy Library where folks working on issues around forestry came together – that's environmentalists, that's loggers; people with a vested interest, and they set up and established the ground rules and the processes before they ever started talking about the topic. So there's a lot of existing models out there that this could encourage whoever who takes this process over to consider.

And the big dilemma is, how do you make sure you've accounted for all, and all different representation? And so it has to be a process that is robust enough to identify who needs to be involved, and they would invite them and encourage them to come on board. Lots of complexity there with whether it's a socially or economically disadvantaged community being able to come to the table and represent their interests.

Another example is this whole full animal of issues on there. This was an interesting point where we first thought, "Listen, an important thing to represent is to establish a timeline for these approaches." Because then that would set the baseline, the standard, at which we are pursuing this. And at first it was easy to identify two possibilities around the timeline. That is, interim storage, and final geological repository storage. But the group came back, and said, "Now, wait a second, let's challenge that assumption; let's establish a timeline for the *best* possible solution first, and then go from there."

And then finally the dilemma of how do you inform folks and how do you make sure that people can understand the truth based on peer-reviewed science? And this was a really interesting conversation for this group as they wrestled through the idea that people are providing the information, but how does the process account for when disinformation is provided? And so this was a big topic of discussion, making sure that information was scientifically-based and that people could find the truth in there so they could reach consent.

Mr. Wayne Pendle [Facilitator 3]. My name is Wayne Pendle, with Leadership Strategies, I facilitated table #4 in the back. So we put together three main takeaways based upon six chart papers full of fantastic information.

The first thing was to clearly define the parties/the phases of a consent-based process. And that began with tribes, counties and states. And then the group had some – most of our discussion around this idea of there should be several phases of nonbinding agreements first. The first one being around siting should be a nonbinding agreement. Licensing should be nonbinding. The binding part comes at construction. And that would allow true consent to take place verses, as it stands today, that binding being way premature in the process that the group felt. Okay.

The second was on informed consent. There were really two parts to that that the group felt. One was on this idea of environmental impact assessments and safety evaluations and hearings on contentions was probably one of the biggest areas of discussion. And then underneath that there were really three groups that play into ensuring that there is informed consent at all of these parties that were mentioned above; these entities, and that was that the applicants, the intervenors, and the independent experts would then come together to say that, "Yes, we truly have informed consent for this community."

And to really ensure that the community has a voice through this process, the group came up with this third main take-away that they wanted to communicate to all of you. And that was that there needs to be this information education/control and support at the local level. So one of the creative ideas of the group thought about was establishing a local control panel. And they used Oak Ridge National Labs as an example for that that would be a group of community citizens that would be brought together – that would have the ability to be able to make sure that this was taking place and that could ask for funding to help bring in experts to educate this community. That could come in and talk even at the grade-school level about pros and cons of this nuclear waste. So where there was this *proactive*, this kind of push-versus-pull information, that they felt was important to have this local control panel that was established.

And that really tied into both of these that would help with informed consent, as well as ensure that all three of these parties and phases were taking place in a manner that they felt would be as fair and as equitable as possible for this situation that we're dealing with. Okay. So thank you.

And then they also wanted to make sure that I reveal this at the end, that "Dissonance drives collaboration." That was our quote we came up with. So, thank you. [Applause].

Mr. Chip Cameron [Facilitator 4]. So this is a report-out for table 2. And there were a few important points. One, the table started exploring – they thought there was value in exploring the physician informed consent analog in terms of thinking about a consent-based process and there was a question, "Well, who is the patient?" It's a collective patient. Which complicates things. And one of the interesting

things to me is that one of the people at the table as we were talking about the physician analog said, "Well, sometimes you just want to have a new doctor, okay? Who you trust more." And that was the comparison between having DOE implement this consent-based process, versus a new organization.

The second thing – there was a lot of discussion about a priority scheme based on safety issues for deciding where waste should be moved from to another facility, an interim storage facility, places where that might be seismically vulnerable, for example. One of the people at the table did not think that stranded sites should necessarily get any priority in terms of moving waste off but that safety reasons should control where waste should be moved from and there's a general feeling that the DOE effort now is a good start on a new and needed waste disposal process and there was discussion of community engagement panels being very valuable and also the value of some of the things that David presented in his panel discussion about Red Teams and the community. Thank you. [Applause].

Ms. September Spore. [Facilitator 5.] Hello everyone, my name is September, and I was working with table number 5. And some of this will look a little familiar to you, because I've heard it a couple times and I can see it on some of the other charts around the room.

And our group talked about a few things, and went in depth on a couple of them, and this was the one that we chose to bring forward to the group. Again, they thought a process that was around some milestones would be important. With a process that tightens as it goes further, so some specific characteristics of the process that we talked about. That there would be stages of consent. For example, there would be stages of screening and prioritization as different potential sites went through the process. So there were the stages of consent; but also a point at which you can't withdraw from the process anymore. In addition, there would be some defined criteria going into the process to be able to get – to enter into the process; there would also be some gates that you'd have to pass through in going through the different gates you'd have to meet specific criteria to pass through the different gates. There were definitely some off-ramps – some off-ramps for those who elected to leave and not continue going through the process or for those who didn't make the criteria.

There has to be an expectation that this is going to take a long time. This is not a milestone that's going to take two months. It's a long process to get the site selected. But at the same time, there has to be some reasonable risk in the timeline and the expectations that it can't just drag out forever.

And finally then there would be a general timeline associated with each of the milestones similar to the automotive industry, I guess you might say, when they have some milestones on how long it should take to create a new car, so there's a general idea of how long they wanted to take. So there would be some general milestones that would then be specific along the way depending on the different sites that were involved inside the process. That's it. [Applause].

Mr. Jim Hamilton. This is going to get us ready to deal with the next phase of this for a second.

So I guess I want to say thank you to all the folks who put work into this, from the small-group discussion perspective. This really dug pretty deep into the fundamental question, which is how would you advise the Department on proceeding? I mean I think we got into some pretty interesting – certainly issues of consent and that came up a lot, but fairly sophisticated, I think, thinking around governance; around relationships; around existing models; truth, truth, truth, came up a whole bunch at times and I think there

is a lot of networked – I don't want to use the word "synergies," but I can't help it – around these issues and I'm not going to tie a giant bow around this, but I think there's a lot of pretty interesting commonalities here and from a what-time-of-day-it-is perspective, it's about 8:45, so if you look at your agenda, I should have here in a second, we've got a few minutes before the public comment period starts and I guess, without opening a giant huge can of worms, is there anything that has been spoken of in the last 15 or 20 minutes that resonates with people; that people may want to add a little bit of significant constructive elaboration to? Around these issues that we just heard about?

I mean we've got a few minutes, not for public comment – that's going to come in a little bit – but just responding to what you've heard and what we've asked you to sort of suggest to the Department. I'd like to open it up a little bit if anybody has anything they want to say that speaks directly to this report-out. It's not mandatory, but we've got a little bit of time.

If not, that's fine. I just wanted to open it up; it's your meeting as well.

Alright, well, again, thank you very much for that, so now if it's okay with you, we're going to move into the public comment period.

Public Comment Period

Now if I look at the public comment period sheet, we've got 13 people who've signed up. We've got about 30 minutes reserved for public comments. If you do the math, with a little bit of flexibility, that's about two and a half minutes per person. To help this along, we've got Tim in the back; he's got two pieces of paper. A yellow one and a red one. He's our timekeeper-helper today. So, we've got a mic up front, we're going to ask folks who want to make public comments to come to the front and address the audience. With a minute left, Tim is going to hold up the yellow sign; when the red sign is held up, it's time to pass the mic to the next speaker.

We have a lot of people who want to speak, so I ask you in advance to try to keep your comments to the best of your ability to the two and a half minutes. The sign-up sheet is here, so I'm going to read the first few names. And if you come up in the order I asked and you can speak to the mic and we can go from there.

The first three people: Marni Magda, Marilyn Ledoux and Richard Mangun. So, those are the first three. Ms. Magda, the floor is yours.

Ms. Marni Magda. Thank you for this evening. I just wanted to make sure that we do focus all of our energy not just on traveling around the country – the whole state of California when you look at this room – this is my experience. Not enough people are participating. The public doesn't understand that we need a bill passed before the Department of Energy can even take anything to interim storage. So as you are circling the country, I wish that you would be focused on public education so that we really do move more quickly. I want to see that DOE railcar ready by 2021; I want to see the two interim storage sites in New Mexico and West Texas become a reality, and I want us to really work to help the public understand that this fuel is the taxpayers' burden. We have got to move on a better system for managing – and it can't just be about running around the country; which it feels a little bit like right now; we're not working toward the real solutions; we're just out there with opinions. And I would like to see a level of focus on

getting that fuel moved from all the dangerous hosts in America to a place with a *huge* standard for safety, for the public, for the next 300 years. Thank you.

Mr. Jim Hamilton. Thank you. Marilyn Ledoux followed by Richard Mangun and Molly Johnson.

Ms. Marilyn Ledoux. Thank you again for everybody coming out tonight. I cannot help but reflect on the demographics of our meeting. And wonder where all the other people are who might represent different demographics? I think that's an important thing for us to notice among ourselves here tonight. Why is it that we came out and others did not? I think a big part of that is that people don't have enough information and the information they do have seems overwhelming and their lives are very busy, they're kind of in survival [mode], perhaps, and so they don't come. Those people cannot possibly give informed consent for what it is you're asking. They cannot. We need to consider that.

I don't give informed consent for moving forward with this process before really discussing with a wide constituency why we have to move this stuff at all. Before we have a safe, viable geo repository. Why do we have to do that? Do we get to ask that question? It's a given in this group that we have to do this interim storage, that we have to move this stuff. Well, is it really? And that's the question I leave with you. Have we asked the right questions of the broadest possible array of citizens and I don't think we have. Thank you.

Mr. Jim Hamilton. Thank you. Richard? Then Molly Johnson and Jan Boudart.

Mr. Richard Mangun. I'm very thankful for the opportunity to actually speak and say what I think to the whole group because I came tonight fearing that wouldn't be – even wondering whether I should come.

I think in our discussion group we picked – we were asked to pick out the most important things that need to happen. And the number one thing was safety. Is whatever we're going to do; is it safe? And that's my number one concern. Is it safe?

And then when we come with a preconceived idea about what we have to do without having properly considered that question, and answered that question, we could end up just creating another problem like we have a history of already.

I talked to people on the Atomic Energy Commission in the 1950s when I was a teenager. And they assured me, "We'll find something; we'll find a way; they'll be a place." And growing up in Las Vegas, and going to high school there, the place was, of course, the atomic test site. That's where it all is anyway. But guess what? That one didn't work. And so what are we going to do now? Are we just going to say, "Well we've got to have something, so let's just pick the best thing?" Or are we going to really think about what *is* the best thing? And choose that and not necessarily just do something. Thank you.

Mr. Jim Hamilton. Thank you. Molly Johnson, Jan Boudart, Randy. [You withdraw? Okay.]

Ms. Molly Johnson. Hi, my name is Molly Johnson, and I'm representing San Obispo Mothers for Peace. And I'm just going to touch on a couple of things; first of all, we really do believe that the very first thing that has to happen is that we stop producing this waste. And decide to do what we've got already. [Applause].

The other thing we're concerned about is the dry cask storage; this is what we have at Diablo, and for those of you, I suggest Donna Gilmore [who] has done incredible work on the type of casks that are being used and they are not robust; they are not what's used in Europe and in fact at Diablo we have a cask right now that is questionable – it has all the earmarks of cracking.

The other thing that – and this is a personal observation of mine. We in San Obispo County are in the Sacrifice Zone. Right now we are a de-facto high-level radioactive waste dump. And even though I want nothing more than to see that waste go; on the other hand, it's very difficult for me to even *think* about sending *that* poison to another community to be poisoned.

So this is a very sticky issue and I do have to say – I'm actually more impressed with this meeting than I thought I was going to be when I came. I came kind of with a negative attitude, I have to admit. And this is a process that is starting to look like it could be a good process. And if this is the way it continues, and I would hope that I said tonight too I was surprised too how few people there were; I was expecting more, but this is a process that we all have to be involved in and that we have to go back to our communities and start educating our communities ahead of time about this. We can't keep this to ourselves. Thank you.

Mr. Jim Hamilton. Thank you very much. Jan Boudart and they we've got Steve Reznick and Joni Arends.

Ms. Jan Boudart. [To Jim Hamilton: "My name is Boudart, B-o-u-d-a-r-t." Jim Hamilton: "I'm sorry."]

On the subject of trust. If you moved into an apartment house and then found out that the builder had not put toilets in, would you ever trust that builder again? And here we have this nuclear waste that we were assured that it was clean, safe and too cheap to meter, but I don't know if anybody besides me remembers that, but – and nothing was done with the backend of the nuclear cycle and now we are stuck with this and our children, grandchildren and great-grandchildren are stuck with it. And this is the tragedy of it.

I wanted to bring the four principles of Nuclear Energy Information Services of Chicago. These come from the Chairman of our Board – her name is Gail Snyder. And the first principle is to stop making nuclear waste. Because we don't know what we're going to do with what we've got; and we just keep making it, and it makes no sense.

The second principle is, and Molly mentioned this, leave the waste where it is in dry cask storage is called HOSS I can't remember what that means right now [from audience: "Hardened On-Site Storage"], and we should leave it – we should leave it where it is. And that if we are going to transport it, which is extremely – which – transporting this nuclear waste is going to turn California into what we lovingly call the local Chernobyl. And we should transport this one time exactly. Not twice. Not take it to someplace and then take it to another place later on because this beams out radiation all the way along the way.

And then we must – we should try to get a permanent nuclear repository geologically and this means that we would transport the nuclear waste exactly once.

[She turns to Jim Hamilton and asks that since one person dropped out, would she have the opportunity to have more time.]

Mr. Jim Hamilton. I'll give you another minute if you can keep it to a minute. How's that?

Ms. Jan Boudart. And then I have all kinds of problems with the idea that we are technologically able at this point to take care of these problems and I only brought up one of my five points that I wrote down but I also wanted to bring up my P.S.'s again – that there should be no profit made from this, and that the idea that nobody has been harmed just makes me crazy because these studies have not been done, and where they have been done in Europe, people *are* harmed by nuclear power plants, and I've got the studies at home I can bring and I just wanted to say that it's really nice to see panel members brought in by the DOE that don't necessarily agree with the DOE and I think that was a very good thing.

Mr. Jim Hamilton. Thank you very much. Steve Reznick, Joni Arends and William, this last name I'm not going to get, from Californians for Green Nuclear Power [last name is Gloege].

[Steve Reznick has withdrawn].

Ms. Joni Arends. Good evening, my name is Joni Arends. I'm with Concerned Citizens for Nuclear Safety. I'm going to read my statement. So CCNS is a nongovernmental organization based in Santa Fe, New Mexico, a state with no nuclear power plants, but a long history of having the Department of Energy and its corporate contractors break their promises of safety at Los Alamos National Laboratory and the Waste Isolation Pilot Plant.

DOE also has tried to ignore federal and state laws that limit WIPP's mission. WIPP is a pilot project to demonstrate that salt can isolate the defense transuranic – which is plutonium-contaminated radioactive waste – for 10,000 years.

Yet DOE currently has *five* formal expansion proposals for disposal of surplus plutonium greater than Class C; low-level waste; commercial transuranic waste; high-level radioactive waste and surface storage of mercury waste at WIPP.

This is an important lesson for communities thinking about "consenting" to DOE. The lesson is DOE breaks its promises. For over 35 years, New Mexico has told DOE and the nuclear corporations that it does not consent to commercial irradiated nuclear fuel and defense high-level waste being stored or disposed of in the state. In fact, Section 12 of the WIPP Land Withdrawal Act states, "The Secretary of DOE shall not transport high-level radioactive waste or spent nuclear fuel to WIPP or emplace or dispose of such waste or fuel at WIPP."

Yet DOE continues to ignore the law and continues to push for expansion of WIPP even though it has *failed*. It has *failed* in its mission to start clean and to stay clean.

DOE's consent-based siting is a sham since it wants to offer incentive packages for volunteer sites, including to a *few* people – a *few* people – with the Eddy Lea Energy Alliance in Southeastern New Mexico and the nuclear corporation Holtec. Congress should not provide funding for the incentives.

The DOE consent process is both to get Eddy Lea Energy Alliance and its neighbor on the Texas side of the border, Waste Control Specialists, to volunteer for consolidated interim storage and for a volunteer defense high-level waste repository at WIPP. Further, WIPP should not change the Nuclear Waste Policy Act to allow waste to be transported to consolidated interim storage sites before a disposal site is approved.

Finally, DOE should publicly affirm – publicly affirm – that states that do *not* consent will be excluded from any future nuclear facility siting process. Thank you. [Applause].

Mr. Jim Hamilton. Thank you, Joni. William from Californians for Green Nuclear Power, followed by Harry Wang and Maria Cornya. Did I get that right?

Mr. William Gloege. Thank you very much. DOE; thank you very much for this meeting. It's been very educational and important.

I keep trying to put everything in context. You know, we're worried about maybe a few people being harmed by radiation or leaking waste that might happen someday, when in fact the waste has not killed anybody; the stored waste at all the sites in 60 years hasn't killed anybody.

We've got a *monster* approaching us from behind. It's called global warming. And James Lovelock, who I think is the leading earth scientist, he's in the UK; he's written several books on our level so we can understand it; I recommend one called the *Vanishing Face of Gaia*. This guy is no lightweight scientist. He's the guy who solved the ozone hole problem. Himself. He invented a device that could analyze the gas up there. He's the guy that came up with the Gaia Hypothesis that the earth is self-regulating. This guy is a scary major scientist. And I mean he is so right on, and it turns out to be right about everything.

He predicted in one of his books that 5 to 7 billion human beings would die from global warming. From the lack of water; from the chaos that would be created; from the loss of agriculture. Yeah, we've got this monster looming over us and here we are worried about maybe someday they'll be this leak and this rule is not exactly right. Let's put all of this in the context of what's coming down on us and our children, and our grandchildren. Please, please think about that. We've got to get this right. We're coming up to the last time when we can make a decision. And after that, our decisions won't matter. So that's my pleading everybody tonight. Thank you very much.

Mr. Jim Hamilton. Thank you, William. Harry. Followed by Maria and Inge Olsen.

Mr. Harry Wang. Thank you. My name is Harry Wang. Sacramento Chapter of Physicians for Social Responsibility. So Physicians for Social Responsibility was formed in the 1960s at a time that the government was still doing at that time atmospheric nuclear testing. And doctors and hospitals were asked to come up with a safety plan, a disaster plan, if there was a nuclear war. And physicians formed a response that looked at the medical consequences of nuclear war and that prevention would be much, much better.

At that time the Physicians for Social Responsibility participated in a study and gathered baby teeth across the country and found that many of them had elevated levels of strontium-90. So there is the reason the public has difficulty, especially where it comes to nuclear, as far as trusting, so building trust will be extremely important. And as fast as possible will be important.

Physicians for Social Responsibility recommends keeping nuclear waste at the current sites a must. They are felt to be unsafe. We do not feel they should be moved for financial reasons alone, but only if there is a safety issue that needs to be addressed.

We also look forward to NRC's updated best practices standardization of nuclear waste management and that would hopefully be available at the time that we go through this siting process.

And then lastly I would like to just say a little bit about what's been discussed about informed consent – like informed medical consent process to make sure the "collective patient" is identified and is participating in these meetings and not just a few people who might've heard about it.

And secondly, the environmental justice issues I think are important in terms of – that a site that does not usually influence people of color, people of lower income, or an Indian nation.

I am frequently asked what would you do if this was your child? And I think that's the kind of standard and ethics we should think about when we're talking about the siting process and where we want this to be. Thank you.

Mr. Jim Hamilton. Thank you very much. Maria? Inge? [passing], Andrew Benson.

Mr. Andrew Benson. Hi everybody. I have two comments. I'll try to be real quick on the first one as it's a pretty simple concept. This is *not* the forum to talk about the merits or demerits of nuclear power. It's wasting everybody's time. You're not going to persuade anybody. Let's please focus on the topic that we're here to address, which is how you safely and fairly dispose of spent nuclear fuel in a permanent geological repository. Please and thank you.

My other comment is addressing the issue that was raised during the panel discussion about the question of how do you secure the consent of future generations when they're not here to speak for themselves. And I agree that this is a very tricky issue and here's my proposal for how we deal with this.

There is a concept in a variety of social sciences, original economics, called Tiebout competitions, named after the guy who thought of it. A simpler way to talk about it is "voting with your feet." If there's some sort of physical amenity or disamenity in a location, people will choose to move there or move away. And on the timescales we're talking about of 2 million years, people have plenty of time to make an informed decision about, "Do I want to live near this location as a permanent geologic repository or not?"

The example I'd like to offer is at San Onofre, just because it has nuclear material there and you can see this concept of "voting with your feet" in action. In 1960, San Clemente, the county closest to San Onofre, had a population of about 8,500. And then San Onofre Unit I started construction in 1964 and in 1968 it went into operation. The 2010 Census says San Clemente has a population of about 64,000 or 65,000 people. People have had how many decades now to make their own decision about whether they consent to live near a nuclear power plant? And the results are in. Tens of thousands of people are quite okay with living near a nuclear power plant.

If the generations who weren't available to make a decision about San Onofre back in the 1960s, they've come along now and they've chosen to live near San Onofre, despite whatever perceived risk there is. So I'm offering this concept of "voting with your feet" as how we can think about the question of future generations. Thank you.

Mr. Jim Hamilton. Thank you very much. So that's the – those were all the people who signed up for the public comment period. And I would now like to turn it over to Mr. Andrew Griffith, the Associate Deputy Assistant Secretary for Fuel Cycle Technologies to offer his closing remarks. Andy?

Closing Remarks

Mr. Andrew Griffith, Associate Deputy Assistant Secretary for Fuel Cycle Technologies. Thank you, Jim. And on behalf of Secretary Moniz, John Kotek, and the entire Consent-Based Siting Team, I'd like to thank you all for coming out here tonight. This is our first public meeting that's been offered in the evening. We sort of recognize going into it that it would be somewhat of an endurance test and I can safely say that you all passed with excellent flying colors, so thank you for that.

The discussion tonight; the inputs you've provided, have been frank, they've been honest, and we couldn't have asked for more. So thank you again for that. This is exactly what we need if we're going to develop a durable process to move this forward. And to move us forward, it's not a luxury, we think. We think it's an imperative. Not only for the importance of the safety and the security of managing this material, because that's a top priority, but also the ethical imperative. Because we don't think leaving this for future generations to deal with is sufficient. So we really do want to move forward.

We heard a lot of recurring themes tonight that we heard in the past meetings. Clearly, the Department of Energy has a trust issue, we get that. We clearly need to address that. Whether a new entity is formed or not – it's part of the Administration's Strategy; however, it will require legislation to form a new entity. In the meantime, as I mentioned, we believe that it's important that we get started. We're essentially setting the table for hopefully a future entity, but if not, we want to be heading down the right direction, and down the right path, and your input is definitely helping that.

We've heard some new things I think tonight; the idea of governance – that's new. There's been some more nuanced information I think that I'm looking forward to reading the reports from the different breakout groups that I think will help illuminate some more nuances. The environmental justice theme – that's a recurring theme; also very important moving forward. And the need to engage with a broader general public across the country – we also agree with that. We are working on that. But any ideas you have to broaden this discussion we would be grateful for.

And to just wrap it up, we believe this can be done in a durable way. We believe that communities will step forward and want to discuss with us how they might be able to play a role and hopefully start this trust-building relationship, because we know that it's going to depend on building trust with a future entity, and it's not just taking this material off the hands of an existing community and hosting a site or a facility that will prove the solution for the future, but basically recognizing that this is a national mission; a national priority, and that's they will be playing a role for our nation and then ultimately we believe that a site will come forward for a repository as well, because that's our ultimate goal is to dispose of the commercial spent nuclear fuel and a lot of defense high-level waste.

And just in closing, I recognize that the Department of Energy faces its lumps in these types of meetings. We get beat up – and that's okay. I think the frank and open discussion is needed. It's going to help inform us on how to develop this durable solution. And I'm encouraged that we will; so if you have thoughts when you leave here, please continue to send them in. We want your input. We believe in this phased and adaptive process. We're not going to have all the answers by the end of this year. But we want to have enough answers so that we can take the next step down the right path for a durable solution.

So with that, thank you all again, be safe traveling home tonight and tomorrow and again, I really appreciate your presence here today. [Applause].

Mr. Jim Hamilton. Thank you Mr. Griffith. Thank you to panel members, thank you to the audience here in Sacramento and on the webinar; thank you logistics team. Great suggestions, great input, great dialogue; much appreciated. Please do not forget to pass in your evaluation forms. They helped us schedule this meeting in the evening as a direct result of people saying, "I can't make it during working hours," so we're listening; we're doing our best.

This wraps up the formal part of the meeting; the webinar is now closing. For those who would join the informational poster session outside, please do so where you came in. Thank you again. We are adjourned. Good night. [Applause].