**CONSENT-BASED SITING PUBLIC MEETING**

Hilton Minneapolis

1001 Marquette Avenue

Minneapolis, MN 55403

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**FULL TRANSCRIPT**

**Mr. Jim Hamilton.** Good afternoon. And for those joining us in later time zones via webinar, good evening.

Welcome to Minneapolis and to the eighth in a series of public meetings the Department is hosting on its Consent-Based Siting Program. Thank you all very much for being here today.

My name is Jim Hamilton; I'm an advisor to the Department as part of their Consent-Based Siting Team. And my role here today is to help us all have an open and productive conversation.

To start off – we have a few housekeeping items to cover, and I'll run through those now. First, from a personal safety perspective, emergency exits are to your left, and to your right.

Secondly, you all should have an information packet that looks something like this when you checked in. Does anybody not have one of these? Raise your hand and we'll get you one.

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

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

Now, the goal of this meeting – or these meetings – is to have a productive dialogue around consent-based siting of nuclear waste management facilities. And to that end, we've designed today's agenda as follows.

We'll first hear from our keynote speaker, Mr. John Tuma, Commissioner of the Minnesota PUC. Following Mr. Tuma, we'll hear from John Kotek, from the Department of Energy, who will then be followed by four panel members who will share their thoughts; and then we'll have a question-and-answer session for about 45 minutes, and will follow that with a quick break.

Following the break, there'll be facilitated small-group discussions to dig more deeply into the issues around consent-based siting that we've heard here today. There will be a report-out session from these

small-group discussions, and then we'll end with a public comment period along with some closing remarks.

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

We hope to cover a good deal of ground today. And I thank you very much for your active and engaged participation.

Thank you for being here, and to get things started, John Tuma from the Minnesota PUC. [Applause].

## Welcoming Remarks

**Mr. John Tuma.** Well, thank you. I don't know if I got the slides up there – yes. Welcome to Minnesota. It's a privilege; I know you've been around all over United States, John; in doing this, and we're the last one, so I guess you saved the best for last. I know this is regional; so if you're from Wisconsin, I hope you drove by our wonderful new stadium the Vikings are going to be playing in. I grew up in Minnesota and I'm a proud 5th generation of Minnesotans. I hate football, because the Vikings tore my heart out years ago by losing four Super Bowls.

So, and apparently the architect said he was inspired by a Viking ship. And I drove by, and I said I just don't see it, unless he's talking about a capsized Viking ship – it kind of looks a little bit like that.

But welcome to Minnesota. We want to welcome you to what I think is a very important thing.

As I give you my keynote address, I don't know who was responsible for asking me to do this, but thank you. This has been an issue that has been important to me and I think to the State of Minnesota for a number of years. We have a lot of deep history around nuclear storage; nuclear storage issues. I note John will be talking later about a lawsuit about one of the reasons why they have to do this. Well, that originated right here in Minnesota.

But I think it's important to understand – particularly with this issue – because it is wrought with a lot of ideological divides and twists and turns that can go strange ways. To understand some of my biases, as I go forward: I am a Republican, but I'm a prairie populist, too. I emphasize prairie populist, because I think Donald Trump is massacring the concept of a populist, but nonetheless that being aside, you can kind of understand where I fall in the Republican side of the world lately.

But a prairie populist – to kind of give you an idea what that means to me – in short, we distrust big business and we distrust big government. Okay? In short, we're the ones who created co-ops; price controls in farming and child labor laws – a lot of those things emanated out of Minnesota; out of the Midwest; out of what we know as prairie populism.

And actually, one of the things I'm working on right now – the Public Utilities Commission – is original. The first Commission in the State of Minnesota has been around for a long time – the longest-serving Commission – it used to be the Railroad and Warehouse Commission. Of course, that was the Commission that developed into the Public Utilities Commission now, and we spent a lot of time not

regulating railroads because we don't have to. We're not captive to the railroads anymore, because we have roads; but we do a lot of work, around, obviously, telecom and in the area of energy – that's our interest. I do serve on the NARUC Committee on Nuclear Issues.

Another thing I think you need to know about my biases – I'm dyslexic, so I don't read all that hot, but nonetheless, it tells you a little bit about me. I actually started in politics very young, growing up and lobbying up at the capital for special education stuff. But if you know anything about dyslexics, we kind of see things different. And we're not afraid to be a little bit of troublemakers. Actually, when my mom was helping us out when I was very young, she read an article in the *Star Tribune* that said 80% of the people in our prisons had some sort of learning problem, and so she was worried she was raising the next criminal – actually it turned out to be worse, as she got a politician and a lawyer. [Laughter].

But it does change, I think, when you hear my perspective, you understand, and I apologize to the Secretary of Energy – I disagree with the Secretary of Energy. You'll hear him in a minute come up on the screen and talk about one of the reasons why we need to do this siting issue. It's not that I don't think what is going on and what this effort is, is wrong; but I disagree with the statement that it's critical to ensure that nuclear power remains an option for low-carbon electricity in the United States.

I disagree with that because I don't think the message from the Nuclear Renaissance folks – that's kind of a label, a resurgence of nuclear power; you've seen it – it's a clear PR campaign by a bunch of predatory financers. There's the prairie populist coming out of me. Who decided, a while back, after Three Mile Island, to buy a bunch of nuclear power plants on the cheap, because they knew the markets and power were changing. We, the ratepayers, had already paid for these buggers, and so they decided to buy these old relics and they want to keep those buggers running as long as they can so they can get as much power out of them as they can and get as much money out of them as they can.

And so, I'm not a big fan of the concept of nuclear power. I don't know if any of you have ever read Kennedy Maize's book, *Too Dumb to Meter*. That's the book I most wholeheartedly agree with – the concept that we have had forced upon us this crony capitalism of nuclear power, because somebody had a bad conscience after World War II.

And so I do have a little bit of a bias, okay? I don't like their message that somehow nuclear power is warm and cuddly. You might think I'm being sarcastic, but I actually sat at a NARUC event – NARUC is our national association – where one of their talking heads was telling them how, "Oh, these are nothing to fear, we can keep them where they're at – I've even gone up and hugged one." I know I look stupid, but I'm actually a little bit smarter than that, okay? Because I don't think you're going to be hugging one of those things in 100 years, okay?

I know you might think, okay, this is a Republican – he is against global warming. But I'm not; I'm actually one who believes that global warming is real. I believe we as people involved in this issue can deal with it, okay? We've created the problem in a lot of ways and we can address it. I know that makes me about the same as sighting a unicorn, but – as a Republican – but nonetheless I do believe that, so I'm not one who just says nuclear power is bad.

But I give you an example of why we do not need nuclear power for dealing with carbon, okay? I give you Diablo Canyon, okay? Just last week, I was reading PG&E is closing it. The reason they're closing it

is not because it is sited near one of the most dangerous faults in the world, okay? They're not closing it for that reason, okay? They're closing it, rather, because it doesn't fit the needs of the future electric grid that is smart, responsive, interconnected, and resilient, okay?

We have MISO now – Minnesota is part of that; our utilities are. Where we have interconnections. But we're also developing smart distributive generation. Those are the kinds of things that are making Diablo Canyon not needed anymore, okay? Electric Power Daily actually reported that as rooftop solar – and I'm quoting them – that "rooftop solar drives down daytime demand and as other renewables proliferate, in California's aggressive clean energy market, Diablo Canyon becomes superfluous. It's cheaper to close in the future then to run. PG&E's engineering savvy led them to see the plant's inflexible 'must run' nature simply does not fit well within the generation profiles of wind and solar and other renewable energy."

I'm not here to tell you that nuclear power is evil, okay? I don't buy into that. I think someday maybe the fourth- or even somewhere down the road, the fifth-generation nuclear power plants that are being talked about may very well fit into this integrated, smart, interconnected grid system, okay? I'm not afraid to say maybe gas is a better backup to all of the renewable generation, okay? I'm willing to say that that's a better bridge, but I'm not necessarily saying nuclear may not fit in that type of paradigm that we're building here in the future.

Regardless, I don't like their message – of the Nuclear Renaissance, okay? I think it's dangerous, because we are not talking about what the real problem is. And as I indicated, Minnesota has a lot of history in this. I ran for office – I was a House Representative – I ran in 1994. I saw George here [Pointing to the audience] – you know what happened in 1994. There were a lot of things happening around nuclear power in 1994. So I had to stake out a position on nuclear power and my advisor wasn't some left-wing professor – I didn't even know Paul Wellstone at the time – he wasn't from Northfield; it was actually my good friend Tom Neuville – a ***very*** conservative Republican from Northfield – but he happens to be an engineer, okay? And he helped me understand this issue far better than I think I would've ever as a country attorney from where I was at, okay?

And I learned that a lot of these issues that have not been addressed smartly by the engineers and the people who were designing these systems, okay? It's an American tradition, isn't it? We're very innovative. We practically saved the world during World War II because of our innovation, okay? We've done great things, from industry to economics. America has led. But one of the things that we do often when we lead is we put on blinders. We plow ahead, and then there's something that will happen – some defining moment – I hope I get this right – some defining moment that changes the way we think and all of a sudden our environmental or some other ethic builds out of that defining moment.

This is the Cleveland river burning, okay? 1969. Now it had actually burned several times before that, but in 1969 it caught the attention of the country. In 1969, it was – many would argue – the birth of Earth Day and the Clean Water Act by a Republican by the name of Nixon actually who pushed it through Congress, okay? We're still using it as a day in Minnesota. I actually made a living lobbying the Legislature passing the Clean Water Legacy Act, building on a lawsuit from that very Act. This is kind of what happens in America. We get to a point, and all of a sudden we recognize that all the good things came out of Cleveland, okay; there's lots of good things that came out of Cleveland; not a lot going to come out of

Cleveland this week, but that's an aside – a lot of good things came out of Cleveland, but the river wasn't one of them, okay? And it took that kind of seminal event to change our perspective on dealing with it.

And as I said, Minnesota – we were dealing with the very big challenge in 1992 – a question of whether putting nuclear rods in a steel cylinder on a pad outside of Prairie Island Nuclear Plant was either permanent or temporary storage. We had a law that said we could not have permanent storage, as did many other states throughout the United States when they allowed the nuclear plants in – the allowed the siting – they said we're not going to allow ***permanent*** storage of waste in our state. They say you can temporarily store it, but we had this Compact with the federal government; that the federal government was going to take care of it. And of course, in 1992, no offense to my friends from Xcel that are here. Xcel experts were testifying in 1992 that the waste will definitely be out of Prairie Island by no later than 2010, okay? It didn't happen. As a PUC Commissioner, it sometimes makes you a little skeptical when experts come up and tell me all these things they know, but that's the prairie populist and dyslexic in me, who is very skeptical.

So one of the things that Judge Klein, the ALJ – the ALJ's Office actually was only one year old when he was doing this as one of their first just gigantic cases that was there – when dealing with the issue of whether it was permanent or temporary storage, cited the South Carolina Governor, okay? Governor Riley. Actually, Governor Riley was quite respected – he's a great statesman – went on to be Secretary of Education under Carter. The people of South Carolina actually changed their Constitution to get rid of term limits with the hope that he would run again. I don't think he did, but they actually changed their Constitution – he was a very well-respected statesman and he had this statement – "There is a basic law of nuclear waste, often overlooked – all waste remains where it's first put." He said that in 1982 and it was quoted in 1992 by Judge Klein. And, unfortunately, he has been accurate to this date. And this is from his Order – these are his findings – these are not my thoughts, but he says these temporary casks are 17 feet high, okay? They are 9-feet cylinders, 17' x 9' cylinders, holding 40 spent fuel rods, encased in helium to keep the fuel cool. Each of the spent fuel rods is highly radioactive with a decaying half-life of 24,000 years, and it takes 10 of those half-lives before the waste is no longer dangerous.

Judge Klein's Finding also indicated that the design life of these casks at that time was 25 years, with experts testifying a maximum life of those casks of 100 years.

I would argue that a river is burning, okay? I don't know about you – how many have been to the Boundary Waters? Okay? You all know the video when you come in, remember we all have to watch that video, okay? I always find this is an important Minnesota ethic. Remember what they say? Leave no trace. Okay? That's an important Minnesota ethic to me.

I go to the Boundary Waters every year, and I always take some young men to teach them that ethic. That we leave no trace, okay?

Now, we leave a trace; if you've been to the Boundary Waters, you know that's aspirational, okay? You get to the site, and you get to the lake; you know, and you can pick out the campsite on the shore because there's a trace of human beings there; you can find the portage because you can see the opening in the woods. So it is aspirational. But I still want those young men, when they're there, to learn the importance of leaving it to the next generation. Leaving it to the next set of campers. So that is better than when we got there. I actually, because – when you've got young men there, you've got to keep them busy – I

actually tell them, “We’re going to leave a stack of wood for one day for the next camper to come along because we want them to bless us for leaving that camp better than we found it.”

And to me that's what this is all about. It's about that next generation. I want my grandkids, and my great-grandkids – and you can add them up to the hundredth degree – to bless us for leaving them a carbon-free energy system without a mess, okay?

Now I'm pretty biased about the river. This is my daughter, okay? Molly, there? The cute one. She and I have fallen in love with the Mississippi River. We homeschool – we homeschooled our kids – and one of the things we did when we homeschooled was we wanted our kids to get excited about learning and pick things ***they*** wanted to do. And for her, it was birding, okay? And she told me about this – I had no idea about this – until 10 years ago, she said the tundra swans fly down all the way from Northern Alaska and Canada and they stage on the Mississippi River from essentially a little bit after Halloween through Thanksgiving. And every year we’ve made a trip down to the Mississippi River, basically stage everywhere south of Wabasha down to the Northern Island; Northern Illinois area. And we hop in our canoe – we always find out where the refugee area is, because you don't want to hop in your canoe because of the duck hunters are out there, but the great news is because all the duck hunters are out there, all the birds are in the refugees, and so we’ve gotten some wonderful photos. That has driven her decision in life right now – she is on Oahe Dam out in South Dakota, studying plovers. She just graduated from the University of Minnesota in wildlife management.

So the idea that we are storing waste – highly radioactive waste – in 25-year casks, or maybe, at best, 100-year casks, when we know the facility will probably be decommissioned, and then we won't have any place to take it to restore the waste in casks, makes no sense. To me, the better message is that the river is burning.

Now I say that understanding that we’re here to solve a problem. And I actually struggled with whether to use this next slide, but I decided to, because I think he would have appreciated the context in which it's used. Actually, Governor Anderson just passed away this last week. Probably one of our greatest governors. But there is a Minnesota ethic, okay? In addition to saying "We’re going to leave no trace," one of the great Minnesota ethics that we've had in politics is that we work across ideological divides.

Governor Anderson made it on the front page of *Time* because Minnesota was the state that works – you might think we’re a mono-party, we are all Democrats, we’ve voted for a Democratic governor since the beginning of time, so – no we weren't – back then, the Republicans still controlled one House of the Legislature and had pretty much controlled state government for three decades before that. And Anderson came in as one of the first Democratic governors with a Democratic House in his support. There was a lot of tension, okay? Politically – things were shifting. But Minnesotans figured out a way to work across ideological divides. And that's your charge today.

I don't want you to rehash the old fights, okay? I want you to ***learn*** from the old fights, okay? Learn our lesson so that we can move forward. And I know some of you out there – probably the Nuclear Renaissance types – who are ready to say, you know, John's a jerk, why did he give this speech? I know some of you out there are saying way to go John – way to tell them. Well that's fine, there is a lot of divide, and a lot of ideological divide here, but you're in Minnesota and I'm going to charge you to do as Minnesotans do well.

Let's work across those ideological divides and no matter whether you think nuclear power is needed for carbon-free generation or whether you think the river is burning, but we all have a goal to do what we were supposed to do with this waste. What we ***promised*** to do with this waste. And that is to put it in a safe place.

When I was in the Legislature, I chaired the Public Safety Committee during 9/11 and after 9/11; I was there drafting up our response to 9/11. And I had information not classified anymore, but it was information that was very clear that one of the targets they were looking at – and there was credible evidence that they were looking at a target right here in Minnesota – was our nuclear power plants, okay?

So this is real. This is a real danger. I recognize that it's a real danger, and we need to do the right thing by securing this waste in a safe place. It's the right thing to do now, and it's the right thing to do for future generations, so my charge to you is hopefully it's time to rewrite Riley's basic law of nuclear waste, okay? It's time to rewrite it and we get to play a part in that, and I really encourage you today to look for those solutions. To think across ideological divides and try to help these folks find solutions.

I told John this before: I said I can't imagine the interview process for his job, you know? Hey John, come and do this job – it's been 40 years and they haven't done anything, it's highly political and it's full of a lot of very passionate people on both sides of the issue, so can you come and solve the nuclear storage problem for us? And so, I appreciate what you and your team are doing John – it is good work. And I want you to give him your attention and also to figure out a way we can continue to work to solve this problem for our future generations, so thank you. [Applause].

**Mr. Jim Hamilton.** Thank you Mr. Tuma. We will now hear from John Kotek, the Acting Assistant Secretary for the Office of Nuclear Energy. Mr. Kotek.

**Mr. John Kotek.** Great. Thanks very much, and thank you John for really an excellent summation of the charge here tonight and as was pointed out earlier – I'm John Kotek with Department of Energy.

Why are you hearing from a U.S. Department of Energy person tonight? [Interrupted by audience].

**Unidentified audience member:** I am the DOE. I am from the DOE. I am from the Department of Energy. Do you like radioactive waste? [Voice continues in background]

**Mr. John Kotek.** So are there folks here who would like to see this play out, or are you here to hear about the charge that we have and would you like to give us a chance to give your input?

**Unidentified audience member:** Is there anybody here who has the authority to remove these people?

**Unidentified audience member:** I rise to object…

**Unidentified audience members:** [Talking over each other unintelligibly].

**Mr. John Tuma.** Apparently I failed in my charge. I apologize. [He laughs].

**Unidentified audience member:** This is not a forum for free speech when these people have to…

**Mr. John Kotek.** Yeah, please go right ahead. [Leaves podium to sit down].

**Unidentified audience member:** Doesn't the chair recognize these individuals?

**Mr. Jim Hamilton.** Okay, can I just – can we just – okay. [Unidentified audience members continue to talk over each other]. I hear exactly what you're trying to say. I have a question. Three minutes. [Turns to Mr. John Kotek.] They want three minutes? Okay, we'll give them three. We're going to give them three minutes.

**Mr. John Kotek.** Okay.

**Unidentified audience members:**

No, we cannot take their bids;

We don't want this for their kids;

A train – a train – a train – you haul it out on a train;

Not on a train, not through our yard, not on a truck;

You make this hard;

I could not, would not, in Minnesota;

I could not, would not, in Arizona;

I will not take it through Massachusetts;

I will not take it in Yucca Mountain;

I will not take it here or there;

I will not take it anywhere.

I do not like radioactive waste;

I do not like it anyplace.

Could you, would you – in a borehole?

I could not, would not – in a borehole.

What if it is safe, and under our control?

I could not, would not, in a borehole – it's not safe or under our control.

I will not take it on the train;

We should not drive it through the rain;

Not on a truck – not next to me;

Not through my yard – you let me be.

I do not like it in Arizona;

I do not like it in Minnesota;

I do not like it in Massachusetts;

I do not like it in Yucca Mountain.

I will not take it here or there;

I will not like it anywhere.

Stop making radioactive waste;

I do not like it anyplace.

You don't like it – so you say;

What shall we do to save the day?

**Unidentified audience member:** Just turn the power off – that's what you can do.

**Mr. Jim Hamilton.** You know, we're going to let them just finish.

**Unidentified audience members:** [Have just finished].

**Mr. Jim Hamilton.** Fair enough? [Applause].

**Mr. John Kotek.** Let's try that again. So I'm John. From the Department of Energy. The reason you're hearing from us tonight is that we were charged under the Nuclear Waste Policy Act for providing a repository for the disposal of both spent nuclear fuel and high-level radioactive waste and spent fuels arising from government activities.

Before I give you a little presentation on the nature of the challenge that we are facing and talk a little bit about the input we're here to get from you tonight, we've got a brief video from Secretary Ernest Moniz, who would like to welcome you all and thank you for being here.

So we can run the Secretary's video.

**The Honorable Dr. Ernest Moniz, United States Secretary of Energy.** [Recorded video]. Hello, and welcome. The meeting you're taking part in today marks an important step toward resolving a challenge that 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 a

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 the Department of Energy's future approach to seeking a community or communities that agree 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. Alright, thank you all again for being here. As the Secretary said, we are committed to finding a long-term sustainable solution for managing the nation's nuclear waste. To achieve that goal, we're developing a process to site new nuclear waste management facilities – storage and disposal facilities – and I'll talk to you a little bit more later about the system that we hope to put into place.

First, I want to stop, and talk to you a little bit about how we got here, and then will end with a discussion with what we're here today trying to do.

As Mr. Tuma mentioned earlier, we want to talk about this challenge of nuclear waste and we want to learn from your input, and from input we've received around the country, to help us design a process that's going to get us to a solution for this challenge.

So how did we get here? Well, as a nation, we've used nuclear technology for commercial nuclear power generation; for national defense and to support science and technology research. Okay?

On the nuclear power side, we've used nuclear energy for decades to produce electricity. It produces about 20% of the electricity in the United States – a little bit more than that in Minnesota – last numbers I saw were in the 22% range. And about 60% of the non-greenhouse-gas-emitting energy in U.S. But on the flip side, it also produces about 2,000 metric tons of spent fuel each year.

Now for those of you not familiar with the technology: In a nuclear reactor, the way you are generating energy is that you're taking uranium fuel rods and the uranium inside the reactor is being caused to fission or split, which releases a lot of energy that can be used to generate steam; generate heat, drive a turbine; but that also results in the creation of highly radioactive what we call fission products. It also results in the generation of things like plutonium and neptunium and some other things we call transuranic elements that need to be safely managed and kept isolated from people and the environment, really for millennia.

Normally, we have a traveling fuel assembly with us – it got lost in the mail, I'm sorry to say – but this is what a fuel assembly looks like and if you haven't seen one before, we're talking about rods; pellets of uranium about the size of your pinky, put in metal tubes 12 to 14 feet long; a total of about 200 to 500 of these assemblies in a reactor, depending on the reactor design. They will stay in a reactor for about 4 to 6 years generating electricity and when they need to be removed from the reactor, they're both very thermally hot and very radioactively hot, so the first thing that utilities do is put them into wet storage in one of the pools you see here on the top left. And as the pools fill up, and as the fuel cools down, fuel can be moved into dry storage – you saw pictures of dry storage containers earlier – the dry storage containers are used at a growing number of reactors around the country. Right now about two-thirds of the fuel at commercial reactors sites in the U.S. is in pool storage, and about one-third is in dry storage, but that fraction is going up as nuclear generation continues around the country.

We also have to provide for the safe disposal of wastes from national-defense activities and some Department of Energy research activities. So, for example, the U.S. Navy uses nuclear reactors to power aircraft and submarines. Research and production reactors have been used over the years either for production for the weapons program or for medical isotope production, or for other purposes, and the Department of Energy has also conducted nuclear energy research over the decades; and so as a result we've got Department of Energy- or government-generated wastes that need to be safely managed.

Some of these wastes are liquid wastes that are turned into glass forms like the vitrified glass you see at the bottom; some have been turned into a calcine form like you see there at the top. But we have this range of nuclear waste that had been generated by government activities stored at locations around the country, principally at the Hanford site in Washington; the Idaho National Laboratory site in my home state of Idaho, and at the Savannah River site in the state of South Carolina.

All told, when you could add this all up, we've got about 75,000 metric tons of uranium equivalent in spent fuel in the United States. We've got about 12,000,000 cubic feet of high-level radioactive wastes that need to be managed. To give you a visual on the 75,000 metric tons of uranium – if you took that fuel and stacked it on a football field, it would be about 20 feet high. That will give you a sense of the scale of what we're talking about. And this is located around the country, right? And you can see we've got, of course, facilities here in Minnesota, but in most of the states in the United States there is either commercial nuclear power; Department of Energy- or government-generated wastes, or both, right? So this is a nationwide problem that we need to confront.

In particular, one of the things that is driving us in the near-term is that there are already 14 sites around the United States where there were power-producing reactors in operation, but they've been shut down. And in several cases, everything is gone – the reactor is gone; the turbine hall; the administration building

– everything is gone except for the spent fuel. So what you have is a spent fuel storage site – guns, guards and gates, and nothing else there.

And of course the number of these shutdown plants will only rise over the coming decades as plants reach the end of their operating lives, alright? Most reactors are licensed to operate out to 60 years – some might go out as far as 80 – but many have been shut down before that, so as that number goes up, the number of these locations with shutdown plant sites will go up, and the federal government bears a great deal of liability associated with this. So, as you may know, under the Nuclear Waste Policy Act, starting in 1998, the government was supposed to start accepting this fuel for disposal. Well, that, of course, didn't happen and as a result – as was alluded to earlier – utilities have been successfully suing the Department of Energy, or the federal government, for not fulfilling the obligation to take those materials. As a result, the federal government pays out hundreds of millions of dollars a year from something called the Judgment Fund to compensate companies that are having to store this fuel that should have been picked up by now under the Nuclear Waste Policy Act. The liabilities associated with the government's inability to pick up that fuel are projected to be more than $23 billion over the next 50 years. So this is a big deal from a financial perspective. And each of us – if you're a taxpayer – you're paying out to compensate utilities for the storage of this material. And that number will only grow over time.

So, you know, we recognize that designing and implementing a solution to this problem is going to take decades to implement. We really think it's important that we get started now. Just to kind of sum up the reasons for that: the waste was created producing electricity or a deterrent for our benefit – whether you agree with that or not, the fact is it was done for that reason – we've created this problem.

As I mentioned, taxpayer liabilities are large and are growing and are expected to amount to tens of billions of dollars. Funding to pay for the disposal of commercial fuel has actually been collected from ratepayers. As you may be aware, because many of you are consumers of nuclear-generated electricity, you paid a 10th of a cent per kilowatt-hour on the nuclear electricity you consumed into something called the Nuclear Waste Fund. Some of that money has been spent, but there's a balance of more than $30 billion in the Nuclear Waste Fund that's been collected from ratepayers. So we've collected the resources to at least get a really good start on addressing this problem.

In summary, we really think we need to provide for a safe, sustainable solution for storage and disposal of this fuel now, without leaving the problem to future generations. We've got the technology and the resources to deal with the waste today, so we think we need to move towards a solution that can protect people and the environment while allowing this integrated nuclear waste management system to adapt in the face of new information or new technical options going forward.

Just a little bit about the history and the approach. I won't walk you through all of this. There's a long history of waste management efforts in United States. There's a poster in the back that goes through a lot of that and I'll point out Tom Cotton, one of my colleagues in the back of the room, if you're interested in understanding more about the history of this problem. Tom is a great guy to talk to. While I'm pointing folks out, I also want to point out Andy Griffith, who you're going to hear from later. Andy is the person in my organization who's got day-to-day responsibility for running the waste program, so you'll want to get to know him.

But suffice it to say that spent fuel and high-level wastes have been produced in United States since the 1940s. We've been studying nuclear waste management since the 1950s. Several attempts have been made to site facilities, all using a top-down, federally-driven approach – none of them have worked. We're here today to try to develop a process that can lead to a durable solution for the management of this material.

I will point out that one of the things that we're trying to learn from is experience internationally. And this international experience supports the idea that a consent-based process is the way to go. Examples of countries where a bottoms-up approach have worked include Canada, Sweden, Finland and France and we're very honored to hear tonight from Kathryn Shaver, who works with the Canadian Nuclear Waste Management Organization, who can talk to you a little bit about what they're doing – the approach they're taking. I will say that of the countries I've listed here, actually Finland is probably the farthest along. They've got a site that was selected with the consent of the host community. That site has been submitted to and accepted by their regulator and they're going to start construction, I think later this year, on their repository. Other nations are not quite that far along, but they have got sites selected with the support of the local community, alright? And we're trying to learn from that.

And that experience in these other countries really helped inform the Recommendations that we're trying to implement coming out of something called the Blue Ribbon Commission on America's Nuclear Future. The reason I'm here tonight is that I was staffed to that Commission from 2010 to 2012 and was asked to come back to actually start help implement some of those Recommendations. The Blue Ribbon Commission Report was issued in January, 2012, and it recommended that the Department develop a long-term solution for managing the nation's nuclear waste using a consent-based approach to siting new facilities. The Administration then took those recommendations and used them to form the basis for the Administration's Strategy for the management and disposal of used fuel and high-level radioactive wastes which was issued in 2013.

That's really what we're here to do tonight – to work on implementing that Strategy that the Administration has put in place, and what that Strategy includes is – or is focused on – is the development of what we call an integrated waste management system that can contain what we call pilot interim storage facilities focused on accepting spent fuel from the shutdown reactor sites I talked about earlier. Full-scale consolidated interim storage facilities that provide a greater capacity and flexibility. Permanent geological repositories for the disposal of spent fuel and high-level radioactive waste and then the transportation infrastructure necessary to move fuel around safely, whether it's by rail, road or barge.

The Strategy calls for the development of storage facilities starting with the pilot storage facility, followed by a larger consolidated interim storage facility to give us, as I mentioned earlier, flexibility in the waste management system so that we can start meeting the federal obligation to accept this material and so we can start consolidating storage from those distributed sites around the country.

On the transportation side, a safe, dependable transportation system is a really necessary link in the operation of any integrated system for managing spent fuel and high-level waste. As a minimum, waste is going to need to be moved from where it's being stored to a final disposal facility. In addition, spent fuel may need to be moved from the widely dispersed sites where it's currently being stored to one or more consolidated storage sites. So we're going to have to work very hard, and very carefully, on transportation

and while there is no state, tribal or local consent for transportation as there is for siting, we certainly understand that people may be concerned about these shipments and we're working to be responsive to those concerns. Principally, by working with state, tribal and local officials to plan for and train for conducting these shipments, including emergency preparedness, and in turn having those state and tribal governments work with their local public safety officials to answer questions and address concerns.

During transportation, radioactive material is contained in large sealed containers we called transport casks. They need to be licensed by something called the Nuclear Regulatory Commission – looks something like the cask you see here. These are really massive containers that are designed to protect people and the environment during routine operations as well as in the unlikely case of an accident. The goal, of course, is to conduct transportation activities in a manner such that people have confidence that the shipments are being done safely. And that means working with your public officials at the state level and at the tribal level.

And, of course, at the end of the day, all roads have to lead to a repository. We need to isolate this material from people and the environment for millennia. The globally accepted way of doing that is what we call a deep-mined geologic repository. So here's just a cartoon of what a repository might look like. As I mentioned earlier, no facility has been put into place in the U.S., although Finland comes come closest. And we do have a deep geological repository in the United States for what we call transuranic waste, which are wastes left over from the weapons program. We have those being disposed of in a facility in New Mexico. Every nation that's developing disposal capacity plans to use a deep-mined geologic repository. What a repository involves is placing carefully prepared and packaged wastes into excavated tunnels in geologic formations such as salt, or hard rock, or clay and what to do is you rely on a series of barriers, both the geology and the waste form, the waste canister, and anything you might put around the waste canister, to provide the isolation that you need over thousands of years.

Other disposal options such as deep boreholes have been considered and may hold promise in the long-term, but they're really in an earlier stage of development and we're focused on a repository.

So how do we get there? We're here to start to have that discussion – to get your input on how we should move forward. We're developing a consent-based siting process to help us work collaboratively with the public, with community stakeholders; governments at the local, state and tribal levels. In developing a consent-based approach, we intend to ensure safe and secure operations over the long-term. We really know that an essential part of this is going to be building and maintaining trust amongst stakeholders. We also know that we're going to have to recognize that the plan we set out on day one – it's not going to be implemented linearly over the decades required. We're going to have to be willing to adapt our operations based on new information and based on lessons learned.

So, the way we are moving forward is again, we're here tonight to engage with you all and we've been engaging with other interested parties on what should the elements of a consent-based siting process be and what considerations should we reflect in the design of that process? We will then put out a series of documents – one, a report back on what we've heard throughout these meetings and through other input channels and we'll also put out a design – a draft of a consent-based siding process that will actually serve as the framework that we intend to implement when engaging with host communities. And then of course, we'll move forward with implementing that approach.

As I alluded to earlier, where we are now is we want your input, and we want it on some key questions, and I've listed them here and I think we have them on a poster in the back. How can the Department ensure that the process we use for selecting a site is fair? What models and experience should we use in designing the process? Who should be involved in the process for selecting a site and what should their role be? And what information and resources do you think would facilitate further participation? And then what else should be considered in the design of this process?

So the most valuable thing we can get out of tonight is your input on these questions.

And so we'll have folks break out later, after you hear from the panelists; we'll have you break into smaller groups; we're going to have facilitated discussions so we can hear your thoughts on the most important issues for us to be considering as we develop a consent-based siting process.

Alright? We'll receive input through this channel, through other channels, as I mentioned earlier; we'll then put out the draft reports I mentioned, summarizing what we've heard and putting out a draft on how we're going to move forward. As part of moving forward, one of the things that we've heard repeatedly is that communities, states and tribes that might consider playing a role in hosting a facility – they are going to need resources. They're going to need funding so they can go out and hire their own experts and answer the questions that they have so that they can assess whether they think hosting a facility can be done in a way that's fully protective of people and the environment and that leaves them better off. So we've requested from Congress $25 million in next year's Budget to provide money to be issued in the form of grants to states, tribes and local governments, potentially others, who want to engage with us on this process.

In our budget process, the Senate agreed with that; the House did not. We don't know what's going to come out as part of our Fiscal 2017 Appropriations process, but that's what we've proposed to the Congress. Okay? And then, as I mentioned earlier, we'll use the resulting process in working with communities to try and find a solution to this problem which has really gone unsolved for far too long.

So we thank you for your input tonight. If you have thoughts or suggestions you want to make after tonight, I've listed our website up there and an e-mail address – keep the ideas coming; appreciate your being here tonight and look forward to hearing what you have to say. Thanks. [Applause].

## Perspectives on a Consent-Based Process

**Mr. Jim Hamilton.** Thank you Mr. Kotek. We're now going to hear from four panelists, each of whom brings a rich and unique perspective to this issue on the siting challenge. And we are going to proceed in alphabetical order.

We're first going to hear from Shelley Buck from the Prairie Island Indian Community; followed by Rod McCullum from the Nuclear Energy Institute; then Doug Scott from the Great Plains Institute and we'll wrap up with Kathryn Shaver from Canada's Nuclear Waste Management Organization.

I'm not going to read their biographies – they are all in your information packet, but we're all very privileged to have them here to speak with us tonight.

So, to lead us off, I turn it over to Shelley Buck. Ms. Buck.

**Ms. Shelley Buck.** Good evening, my name is Shelley Buck and I am the President of the Prairie Island Tribal Council. I am appreciative to be invited here this evening to give our perspectives of the DOE's consent-based site efforts.

My tribe's Reservation is located on the ancestral homeland of the Mdewakanton Dakota on Prairie Island. Prairie Island is formed at the confluence of the Vermillion and the Mississippi Rivers in Southeastern Minnesota, which is approximately 35 miles Southeast of here.

The Mdewakanton, or those born of the waters, have lived on Prairie Island for countless generations. The tribe, currently based on both fee and trust lands, has grown through various federal acts, beginning in 1891, and direct purchases by the tribe, and now totals over 3,000 acres, including both land and water.

As many of you are aware, immediately adjacent to our homeland is the Prairie Island Nuclear Generating Plant. There is no community in the United States closer to a nuclear power plant than ours. The Prairie Island Nuclear Generating Plant has been online since 1973, and is currently licensed to operate until 2034.

We had no role in the siting or licensing of the plant. Like most nuclear power plants in the country, Prairie Island plant developed on-site storage to keep the plant operational. The Prairie Island ISFSI is just 600 yards away – or for you golfers, it's a long par five – from our tribal members' homes and less than a mile from our community center; our elders' center; our education center and our gaming enterprise.

The plant has been storing spent nuclear fuel on-site since 1995. When the ISFSI was licensed by the NRC in the early 1990s, we understood that the on-site storage was temporary. Meaning it was a temporary means of keeping the plant operational until Yucca Mountain could begin accepting waste.

My tribe strongly opposed the ISFSI while the surrounding communities supported it because of the continuing tax benefits and local jobs.

There are 40 casks stored on-site and the license for the temporary storage facility has just been renewed for an additional 40 years. If the Prairie Island Nuclear Generating Plant is decommissioned in 2034, the spent fuel is estimated to require a total of 98 casks or approximately 2,500 tons of spent nuclear fuel.

The Prairie Island Power Plant and its ISFSI are two of the most important issues my tribe faces. We are actively engaged with the Nuclear Regulatory Commission in the regulatory process. We are also engaged with the DOE on transportation matters through the Tribal Caucus. According to the original licensing documents for the power plant, it was assumed that the spent nuclear fuel would be sent to the DOE's West Valley Facility for reprocessing. Thus, communities would not need to worry about stranded spent nuclear fuel. This never occurred.

With the passage of the Nuclear Waste Policy Act, the spent fuel was to be shipped to Yucca Mountain for disposal starting in 1998. As we all know, licensing activities for the Yucca Mountain project were halted in 2010. Without a federal storage or disposal facility, Prairie Island is the de facto storage site for the indefinite future.

No one has asked us whether we consent to hosting the spent nuclear fuel for the next several decades or longer.

In 2013, DOE's Strategy for implementing the Recommendations of the Blue Ribbon Commission calls for a pilot interim storage facility by 2021 that could accept spent nuclear fuel from shutdown reactor sites; a larger interim storage facility by 2025; and demonstrable progress on the siting and characterization of repository sites to facilitate the availability of geological repositories by 2048.

These dates were absent from the DOE's December 23rd, 2015 Federal Register Notice, and in the integrated waste management booklet. This omission makes me concerned that the consent-based siting process is behind before it even begins.

Slipping deadlines; inadequate funding; on-site storage and the continued storage role have all contributed to the lack of urgency in removing spent fuel from sites that were never meant to be long-term sites. The communities impacted by on-site long-term spent nuclear fuel storage have been patient with deadlines, while deadlines for removing the fuel have come and gone. But our patience is wearing thin.

With that history and experience as a guide, I would like to offer the following recommendations as the DOE moves forward with consent-based siting.

1. Indian tribes are not political sub-jurisdictions of the state, nor are tribes equal to states or counties. The DOE's goals for a fair process seem to indicate that all levels of government must be in agreement before a site proposal can move forward. Indian tribes are sovereign governments, free to develop their land as they see fit; free from state or county oversight. Not only is this well-established law, it's recognized in the Nuclear Waste Policy Act. States and tribes should be thought of as adjacent jurisdictions, much like Minnesota and Wisconsin. Minnesota wouldn't have a voice in what happens in Wisconsin. Why then would a state have a role in what happens with the tribe?

2. Relatedly, tribal governments are able to speak and make decisions for themselves. We expect a government-to-government relationship with the DOE.

3. The DOE has an obligation to consider impacts to Indian lands from proposed storage sites, if applicable, and work with Indian tribes on a government-to-government basis.

4. Current host communities need assurances that the fuel is not coming back once it goes to the interim storage facility.

5. Potential host communities need assurances that the spent fuel will not be there forever.

6. Maximum benefits must be provided to potential host communities. Benefits could be technical, financial or regulatory; that is, the state or local community has some regulatory oversight.

7. The DOE must give deference to the community closest to the proposed site, since they bear the greatest risk. We must presume that a potential host community has evaluated the project and understands the risks involved. If adjacent jurisdictions are allowed to intervene in the decision-making, the process becomes political. Adjacent jurisdictions will have the opportunity to participate in the licensing process to raise technical, environmental, and safety concerns.

8. The DOE must consider Nye County as a potential host community. At the July 7, 2016 House Subcommittee on Environment and the Economy meeting, representatives from Nye County reiterated their interest in, and support for, the Yucca Mountain project. They have evaluated the project; understand the risks and benefits, and still want to host the repository.

9. The DOE should engage the two private entities working to develop interim storage facilities in Texas and New Mexico. These two communities have demonstrated their willingness to host storage facilities and also have the consent of the adjacent jurisdictions. There is no reason to continue this process and expend resources just because the DOE didn't identify these sites for their consent-based siting process.

I would like to reiterate that unless it is amended or repealed, the Nuclear Waste Policy Act is still the law of the land. The NRC has completed its technical and scientific evaluation of the Yucca Mountain site and released the five-volume safety evaluation report, or SER. The SER found no technical or scientific showstoppers. Having worked closely with the NRC over the last 22 years, we have the utmost confidence in the Agency's technical and scientific qualifications. It bears reminding that there is a cost for inaction on both the local level and federal level. We understand that one of the goals in removing the spent fuel is to reduce the federal government's liability for partial breach of contract estimated to be $20 billion by 2020. This liability is now the responsibility of the taxpayers – you and me.

At the very local level, we have spent millions of dollars participating in licensing dockets; hearings at the federal and state level and meetings with the NRC and the DOE, all in an effort to get the nuclear waste out of our backyard. These are funds that could've been used for other purposes.

On a final note, because of the federal government’s inaction, we have taken the unusual and drastic step towards securing safe land away from the threat of a nuclear disaster. We have purchased 112 acres East of St. Paul because of the continued storage of spent nuclear fuel or in the event of an accident at the plant. Potentially relocating parts of our community is not something we take lightly, but it is something we must consider for the future of our tribe. This is an example of the impact of the federal government’s inaction toward host communities. It is time for action and consent-based siting is a step in the right direction. Thank you. [Applause].

**Mr. Rod McCullum.** My name is Rod McCollum. I'm from the Nuclear Energy Institute in Washington, D.C. We’re the trade association for the commercial nuclear industry in the United States – the owners and operators of approximately 100 nuclear plants. We are the nation’s largest forum of clean-air energy.

I got into this profession many years ago because of my belief in clean-air energy. For my senior class project, when I was in high school, I designed, built and operated a solar hot water system. When I was flying up here on the plane today, just South, I looked out the window and I saw a lot of windmills and I saw them all spinning, and that made me feel good.

We are going to need all of these things if we are going to have a truly clean planet. Nuclear energy has an advantage over these other things in that it's always on. It's base-load power. It's large-scale. We’re building new nuclear plants in the South, although we are shutting some down in markets that are not as friendly to our technology because the folks down there want to develop the large-scale industries that need big base-load plants.

So it is something that I believe in now. In the last several years of my career, I have been working on the used fuel issues. I've listened to the previous speakers talk about everything that's gone on before, and I lived most of that. I've come to know how good we have become at storing these materials. We currently store over 70,000 metric tons, and 2,500 of those casks you saw pictures of earlier.

As Shelley Buck mentioned, we have begun renewing the licenses. None of us want to be in the business of long-term storage. We have contracts with the Department of Energy to pick up these materials. Those contracts were supposed to start getting honored in 1998. So certainly we encourage progress in this area.

Now the subject of today's meeting is something called consent-based siting. Consent is something we are very familiar with in the nuclear industry. It's something that we have to seek and earn every day we do business in every single community we do business in. There is not a process that a government agency can develop that gets you to consent. Consent is about the integrity; the behaviors; the actions of the people seeking it. It's about what kind of corporate citizen you are; it's about what kind of neighbors we are; it's about how we live our safety culture. I always know when I'm walking through a city with somebody who works at a nuclear power plant because they're the ones who always go right to the crosswalk and wait for the sign to turn to "walk" and stay in the crosswalk as they cross. This is the safety culture of our industry.

I'm privileged in my career at the Institute in representing this entire industry, including Xcel Energy here in Minnesota. To have met some of the finest people I could have ever hoped to meet, and I am proud to serve them.

And I think that if DOE is going to look forward for a process, it needs to realize that state and local governments, tribes – it's not going to be the procedure that brings consent in those areas. It's going to be earned through the demonstrated ability to make and meet meaningful commitments.

There are already multiple processes in place – our country just turned 240 years old this month. Those years of experience have given the strongest democracy in the world many processes by which we can work through our issues involving the public and do so in a credible way, and earn consent.

I think an example was cited early about the Prairie Island Indian community and I truly commend the community for the extent to which they've gone to look after their sovereign rights in the interests of their people.

I know a recent example was when Xcel Energy had to extend the license of the casks – now, granted, the Prairie Island; the Indian community; the state of Minnesota; Xcel – none of you consented to being in the long-term storage of used fuel business. But you found yourself having to cope with it. The Indian community intervened in the licensing process – an existing process. And I think because Xcel has worked hard at earning consent with its neighbors in all the decades they've run those plants, you were able to negotiate through that process – the best way possible to manage long-term storage there. A lot of commitments were made to R&D programs. I worked with those R&D programs. We are going to store these materials until DOE picks them up.

The Nuclear Energy Institute will comment on the Department's consent-based siting initiative. And there'll be three major themes in our comments.

First of all, the Nuclear Waste Policy Act is the law of the land. That's what gave us Yucca Mountain. The unilateral decision to terminate Yucca Mountain in 2010 is probably the best example I have ever seen of how not to earn consent. Again, making and meeting commitments – you walked away with no public process whatsoever. The people in Minnesota and all the other 35 states with nuclear power plants weren't involved in that. There were no public meetings; there was no Notice for Public Comment and there were no public hearings. It was a federal agency making a decision the same way they make decisions in the Soviet Union – or made decisions in the Soviet Union.

That process had already succeeded in earning consent in Nye County because the Department funded independent scientific and research programs in Nye County and the citizens of that county came to believe in the safety of the project.

There is a licensing process that has been interrupted that should be continued at Yucca Mountain. That process, similar to how the negotiations occurred between the Prairie Island Indian community and Xcel Energy in the same kind of licensing process for extended storage, could lead to consent in Nevada.

I brought one thing with me. This is Chapter 3 of the Yucca Mountain Safety Analysis Report. There's only five chapters in that thing and it fills up a bookshelf – why is Chapter 3 so thin? Chapter 3 is "Research and Development Programs to Resolve Safety Questions." There's nothing in here but the title. The Department of Energy told everybody that there were no safety questions. They looked a million years in the future and had no safety questions.

This could be volumes through the negotiations that could still come in the licensing process – this could become volumes describing research and development programs to address the concerns the state of Nevada and the people of Nevada have raised in the licensing process. The state of Nevada and the people of Nevada and the Indian Nations in Nevada can be given a role in determining the outcome of those research and development programs.

There is a pathway to consent in Nevada – it's still the law of the land. The Nuclear Waste Policy Act – either change the law or follow the law, but these licensing processes that some of us are so familiar with – these are the ways we make decisions in our representative democracy, and we shouldn't feel like we need a new process.

Another couple of places we don't need new processes – and this is our second major theme of my Institute's comments that have already been mentioned – the facilities in Texas and New Mexico that are seeking to store the materials. A new process doesn't need to be imposed on them. They're working within the processes already established in their state. The state of Texas has a very strong relationship – they have a regulator, the legislature – these processes are working.

**Ms. Karen Hadden.** [Interrupting from the audience]. The people never got to vote. That is a falsehood. The people in Texas and New Mexico do ***not*** want radioactive wastes in their backyard. We are tired of hearing this message portrayed around the country. It is false. [Applause].

**Mr. Rod McCullum.** I look forward to the outcome of those processes, and if the outcome is that the people prevail – and I think there's plenty of opportunities for the people of those states to participate – if the outcome is that people prevail, then I would accept and respect that we wouldn't be storing waste

there. If you need a new process, fine, for a new site. If there's some new group of people you want to get better at our reaching for, but it's really – it's really about your actions.

The last, and third thing, is we are very concerned about stewardship of the nuclear waste fund. $35 billion has been paid into the Nuclear Waste Fund by the electricity consumers of America. There have been lawsuits against the Department; and there will be more – the Department currently estimates its liability for not performing on its Contract to be $29 billion. That doesn't mean there's $6 billion left, because it comes from a different place – the taxpayers are on the hook for the lawsuits and the ratepayers paid for the repository that didn't get built. So if you've paid your electric bill, and you're paying your taxes, you're suing yourself. And that's a sad state of affairs. That is not conducive to earning the consent of the American people.

I thank the Department of Energy – I thank you for asking me here; I thank you for asking people what they think about how we should site these facilities, but at the end of the day, you can draw up a process and you can write it in gold, but it's really about how the Department behaves in those processes and about how the Department takes actions and meets commitments.

I look forward to seeing those commitments met. I have worked at this so long because I have hope that they will be. [Applause].

**Mr. Doug Scott.** Good evening, my name is Doug Scott and I'm Vice President with the Great Plains Institute which is a not-for-profit that is based here in Minneapolis working all over the country on energy and environmental issues. We actually don't do a lot of work in the nuclear energy field, but we do do a lot on consent-based processes and trying to bring people together on issues that are very difficult.

I think why I'm here is because of my past, where I worked both as the Chair of the Utilities Commission in Illinois – I was a colleague of Commissioner Tuma's – and also before that I was the head of the Environmental Protection Agency in Illinois, and so I've worked with the nuclear issue for a number of years. I was also a mayor of a city that was located adjacent to a town in Illinois that actually has one of the nuclear plants there, so obviously it's an issue that's very, very important.

And I'm going to talk about it a little bit differently, perhaps, because I want to talk about it in terms of what a consent-based process might look like, and what are some important things to consider when looking at that kind of a process.

I think, obviously, as some of the issues have been brought out already – I think one issue that tends to get overlooked when people are talking about this – when you're looking at formulating a long-term strategy to store waste in one or a number of permanent repositories, is the transportation issue. And I know John talked about it a little bit earlier – it's been mentioned a couple of times – but just living in a state; I still live in Illinois where half the freight in the country goes through Illinois at one time or another on rails – that's a very, very important issue if you're talking about truck traffic. And having been with the EPA for a number of years in Illinois, I saw a lot of issues of transportation of very hazardous or difficult materials that really becomes the issue itself – is how to transport those materials – and so one of my recommendations to DOE would be to spend a lot of time working on the transportation issues that are involved in this, because for every community that you're talking about a repository being located, and obviously that's a very heightened interest in those particular communities, there are going to be

thousands of communities that you're actually going to be transporting those materials through, so that becomes a very, very important issue everywhere along the line. I know they understand that issue, not just because they mentioned it tonight, but because it appears in all of their materials on the subject, but obviously is an issue that is incredibly important.

I've seen siting processes through a number of different lenses and perspectives over the years, and I'm just going to list a few points – these are in no particular order – but I think are extremely important in any kind of consent-based siting process.

One is to understand that all of the folks who need to understand the issue come at this with very different resources. They don't all have the resources that the Department of Energy has; they certainly don't have the resources that the utility companies where the waste is stored right now; they don't have the resources that those companies have; they don't even have the resources available to them that, say, a commission would have, or that a state agency would have available to them, and so it's really, really important to try to bridge that gap and to try to give the resources to the people who are going to be affected by this. And you've heard a couple of efforts along that line tonight as well, as well as third-party review, which I think will be important – I'll mention a little bit later.

Also understand that having been an elected official for about 10 years, I can raise my hand and say I understand that the elected officials don't always represent what the people in their communities think on a particular subject or they may not represent it for a long time to come.

Just a quick story: there was a mayor in a town in Illinois who thought it would be a wonderful economic development opportunity to get as much waste – solid waste, garbage – as he could in his community, because he had the dream of forming a ski hill in his community – in Illinois, we don't have a lot of hills, so he thought this would be a wonderful moneymaking opportunity. Nobody in the town really agreed with him, but he had the support from the majority of people on the City Council to do that, but certainly not something that the people in that community wanted.

This is a much more difficult issue than that was, even though that one had some health impacts for the community, but understand that it's not the elected officials – it's the folks that they represent that are the most important thing to that. And that's why the issue of off-ramps in a consent-based process – having consent now, and I think John alluded to this, when he was making his presentation about the ability to be flexible and realize it's not just we're going to start at this end and we're going to get to the end, and it's all going to be one smooth process; realizing that you're going to need some flexibility to adjust to changing information and perhaps changing consent levels of the places where you're looking at for this.

All of which leads to – and it's been alluded to many different times and many different ways tonight – transparency being really the key to this. This is not a quick process, obviously. It's an incredibly long process and will continue to be and I think that as much as you can bring the public into this, whether that's through referenda or other issues, many different public meetings; different kinds of public meetings at different times in different places. I've seen a lot of times where boxes get checked – we had our public meeting – but you had it at two o'clock in the afternoon when everybody was working and you couldn't get to it, so it's really important – the idea of having a transparent process that involves as many people as possible. And that information is available in as many ways as possible. Everybody learns

differently; everybody learns through different processes; people have different technology and different resources available to them.

Some of this information is really, really technically very difficult. Even from the slides tonight – and I've worked and talked about this issue for a long period of time – some of these issues get incredibly complicated and so we have to keep that in mind as well.

As well as a clear benefit and risk analysis to this. We've heard about incentives; I think those will be important in this process, as well as having a really clear look at what the risk and the benefit is, which means that all the analyses that we're talking about I think need to be subject to some kind of third-party review so that the resources go to the affected communities; they have the ability to find people that are experts in this field so that they can be comfortable with the decisions that are made.

This waste exists as you've heard tonight all over the country, in many different communities. Trying to locate it in a handful or even one community is going to be a very difficult process. Everybody does better when everybody has the access to all and the best information possible. Thanks. [Applause].

**Ms. Kathryn Shaver.** Good evening, I'm Kathryn Shaver, and I'm with the Nuclear Waste Management Organization in Canada.

So just briefly, for background, the government of Canada has approved a plan to develop a deep geological repository for used nuclear fuel and legislation required that our special-purpose organization be set up to oversee that plan, including the siting process.

So we started the siting process back in 2010. Twenty-two communities came forward to learn more and explore the project. Since that time, we've been gradually narrowing down through screenings and assessments and we're currently working in nine different areas.

This evening I just wanted to comment a bit on what was important when we initiated the siting process, and then just offer a few of my own personal reflections.

So what was important in starting the siting process? Really important to first understand what public expectations would be. We saw that the decision on the site was obviously one of the most critical decisions for the Canadian program, and before going out, it would be important to have a decision-making process in place that would be seen as appropriate and fair. And we actually started the dialogue – we spent two years developing a siting process – started very much like what DOE is doing. And having conversations about expectations, everything from roles and responsibilities; principles; other considerations. From the two years of input that we got, we then designed the architecture of a siting process and through that engagement really surfaced a lot of key principles that people across the country felt were absolutely essential, so those are reflected in the program that we're implementing today.

So I'll just mention a few of them. Obviously, a focus on safety; so above all, meeting or exceeding regulatory requirements; ensuring the safety of the people and the environment – absolutely the priority.

The other part that really came through in our dialogues though was community well-being. Like many countries in the past, these kinds of topics were always technically-driven. There was insufficient engagement; there wasn't attention to the impact on communities. So it was very clear that we needed a

community-led process; communities needed to opt in; they also have to have the ability to withdraw for many years into the assessment process. And at the end of the day, the project can only be sited with an informed, willing host. And must respect aboriginal rights and treaties. So those are just some of the very key principles.

There was also much discussion about how detailed should the siting process be before you get started. So people talked a lot about needing to see transparent principles and commitments; they needed to see the key milestones; the different steps in the process – but they really urged us not to set prescribed deadlines and schedules. So they felt that with safety being the preeminent focus, we needed to take the time to demonstrate safety and not be artificially confined by a deadline. So that seemed to be a very important consideration as well.

I'm going to turn now to just a few reflections given the time we have. So we are six years into a process. What are some observations?

It was really important to set the conditions and environment that would make it possible for communities to enter a process to learn. And it was certain features of our siting process that were particularly important in that regard, so certainly confirming the empowerment of communities was absolutely key. The commitment to only site with an informed and willing community, but ensuring up front that they believed in having a shared decision-making process. We actually committed to a partnership model, and we've committed that we won't develop a repository without the interested community, the First Nation or the native people or the surrounding communities in the broader area supporting it and working in partnership, and that's been an important commitment to make.

There was much discussion about who gets to show willingness at the end of the day. And so we say that we need an informed, willing host. People were very concerned that that could be a mayor – a single local politician – and that would not be sufficient. And it was very important for us to clarify that what we would be looking for is a compelling demonstration of support at the grassroots level. So we haven't said that it has to look like this referendum or this type of survey, but we've indicated that we're looking for grassroots-level support and it will have to be a compelling demonstration. Culturally, communities will no doubt at that point in time have their own preferred way of demonstrating that, but it's been important to set that parameter at the front.

Also, communities have made it clear that when they came into the siting process, it's not because they've decided to host it – they're in a learning process. So we have to respect that. So what goes hand-in-hand with that is our organization needing to publish programs of funding available to communities and organizations who want to be involved in that learning process; important to equip them to take their own decisions at the end of the day.

And finally, we're not asking for communities to demonstrate willingness for many years into the future.

One of the particular programs – I just wanted to note – that has proven to be very important would be the funding of strategic planning; envisioning futures, and allowing community members to sit and together really assess whether this kind of project is a good fit for their area. So, obviously there's a big economic impact of this kind of project, but socially; culturally; spiritually – what does it mean for an area – and it's important to take the time to think through with community members what this really means. At the end

of the day, our organization can undertake safety work and technical analysis. The communities are the only ones that can assess the social assessment.

I just want to say a word about how important it's been to retain some flexibility to detail parts of the siting process as we go forward. We found it's been really important if we're working with communities in partnership to be able to pace ourselves with communities. So if communities are wanting us to pause before moving on to fieldwork, or environmental mapping so that we can design this together – it's important to pause. It's part of that collaboration.

It's also important to have the flexibility to continually review and update the funding programs. So communities become much more sophisticated; they are driving the learning program; they're charting out how they're going to engage the broader area; we have to keep the funding programs updated and relevant, and keeping pace with communities.

The last point I just want to note has to do with the long timelines involved in undertaking these technical assessments of sites and people often talk about the challenges of keeping communities or regions actively interested and involved for many years. It's a really complicated project, and certainly it's important to have a journey that's respectful and well-supported for all those in it.

But at the same time, longer timelines actually bring opportunities. Unlike some other projects, there's really a chance here to develop trusting relationships and continue to strengthen those. There's time to co-create what the siting process looks like and start to envision together what a partnership could look like at the hosting stage. There's also time for meaningful discussion in the broader regions involved in the siting area. A really important discussion, and that takes time. So thank you very much. [Applause].

**Facilitated Public Discussion with Panelists and Acting Assistant Secretary John Kotek**

**Mr. Jim Hamilton.** Thank you Ms. Shaver, and thank you very much to all the panel members. And thank you all for traveling here today and sharing with us your thoughts and observations. I think that's much appreciated.

We're now going to open the floor to questions from the audience for any of the panel members. And for those on the web stream, we will also take questions from the web, so type your question into the chat box and it will find its way to me and I'll ask the questions of the panel members.

For those in the audience, all I would ask you to do is raise your hand – we've got two wireless mics – we'll get you a wireless mic. Simply identify yourself – name and affiliation, if any – [Referring to audience member:] I will get to you in a second – and ask your question.

But before we start, we've got a panel here full of people who've spent a lot of time working in this area. And this is an opportunity to ask of them questions you may have. If you want to make a statement, there's time for that as well at the end of this meeting. Just understand that this is the Q&A part – statements come later.

And finally, this is the eighth meeting we've had on this issue. And we've found that these meetings work well for everybody when we are all able to be heard.

So with that, we're going to open up the Q&A. And I'm going to do my best to do it in the order of people I see.

So I've got the first person right here [Pointing]; and let's jump into it. You're two, and then you will be three.

**Ms. Karen Hadden.** Hi, my name is Karen Hadden. I have come here from Texas. I am the Director of the Sustainable Energy and Economic Development Coalition. I also work with a statewide organization that is very concerned about radioactive waste dumping.

I objected violently to the comments that were made earlier about Texas and New Mexico wanting radioactive wastes. We. Do. Not. Granted, we have political leaders who have been bought off. I think everybody in this room has had times when they have witnessed political leadership being bought off and not representing the people.

The people who were about to get dumped on and who know darn well that they have been targeted since the Blue Ribbon Commission in 2012 are largely Hispanic communities in West Texas, sitting on the border with New Mexico. They do not want this radioactive waste. Andrews County Commissioners did in fact say that they supported Waste Control Specialists move to bring in high-level radioactive waste, but they are not widely supported in this decision in the community. I have personally gone to Andrews County. I have talked to people. I have worked with local citizens who have talked to people. And nine out of ten people on the street either don't even know what's happening because nobody told them, or they do not want this in their backyard, or both.

Now, those County Commissioners are not speaking for the people. These are people who are looking at the dollars that may flow into their county. And that's all they're looking at. They're not looking after the health and safety of their community.

So I'm wondering why – okay, I want to talk about consent. And here's my question.

Okay, if a young couple starts dating and the man is interested in further relations with the woman, you would think that maybe he would ask her if that was okay. That would seem logical, if she was going to consent. She probably would not consider it adequate if he instead went to eight of her friends and said, "Is it okay with you if I have relations with her?"

The connection here is exactly this. You would consider that inadequate. That is not consent by the woman. The DOE has now hosted eight meetings, everywhere else around the country. If you look at the map, there's a big arch and there are hearings held in Denver; in Boston; Philadelphia; California, and yet somehow there's this big gap on the map that is Texas/New Mexico. We know darn well that the plan is to dump it on us. We're tired of this farce that says that's not what's happening. It's been in place since the Blue Ribbon Commission. The WCS people have already put an application out. So it's not acceptable in the world of consent to go to eight other states and ask them "How do you feel about dumping on Texas and New Mexico?" Because the answer is no, ***we do not consent***, and I want that to be loud and clear.

While our politicians may get bought off, we do not consent. My question is, why do you continue to put forward the portrayal that in fact Texas wants this waste? [Applause].

**Mr. Jim Hamilton.** Alright, thank you Karen. Who would like to take that?

**Rod McCullum.** I'll give it a try. I think first of all, the WCS folks that operate that facility have done a lot to earn consent over a lot of years. They've been managing radioactive and hazardous materials in that community. They've been engaged with that community. They're good citizens in that community.

From where we sit in Washington, D.C.? We see that as originating in that community.

Now, I don't expect consent to be unanimous, and I certainly hope your organization has a voice in everything that goes on in Texas, because that processes is only in its beginning stages. They just recently filed a license application. If you don't believe the licensing process is a tough and fair way to determine whether or not you can move forward with something – well, they've got a lot of questions on that application. They just answered them today. We'll see if the answers are any good.

I would encourage everybody in Texas, and everybody in that corner of Texas, to participate in the process. And I think it is a lot more than just about asking – it does have to be earned. I've had the good fortune to be happily married to a wonderful woman for 28 years. I don't have to ask her for consent – I have to earn it. I have to more than ask her for consent. The way I have behaved in being faithful to her, and living my life, and the way we've raised our kids – that's how I earn consent. It's not just a question you ask one time – okay! We got consent. There's got to be a lot behind it. And I think WCS has done a lot to earn the consent and we'll see. The process will tell us whether they really did or didn't, and I will live with whatever result it brings us.

**Mr. Jim Hamilton.** Thank you, Rod.

**Ms. Karen Hadden.** The DOE has not come to Texas.

**Rod McCullum.** I agree – I agree they should have…

**Mr. Jim Hamilton.** Actually, Rod, we're going to allow John to take this.

**Mr. John Kotek.** Yeah, well, let me explain from the DOE perspective. We are not at the point where we are looking for locations. What we're doing is we're getting input on the design of a process. We will then embark on a process where we look for communities, states and potentially tribes that may be interested in serving as willing and informed hosts. So we'll get there, but we're not there yet.

**Ms. Karen Hadden.** This is absolutely…

**Mr. Jim Hamilton.** Karen, Karen, I understand. But we're going to try and get other questions…

**Mr. John Kotek.** And to clarify on that, there are communities that have expressed an interest. They know that part of our strategy for the integrated waste management system includes the development of storage facilities. And so some communities have gone out – and before we've even asked – they have started down their own process of developing proposals. Those are not DOE proposals – those are private initiatives. Again, we have not asked for or gone out looking for sites yet. We're not at that point yet.

**Mr. Jim Hamilton.** Okay, we've got the gentleman here. Wait for a mic please.

**Mr. Allen Muller.** My name is Alan Muller. I had a small environmental NGO and I have residences in Red Wing, Minnesota, and Port Penn, Delaware, and from both of those locations, I can look out my office window and see reactors.

I want to share with you the thought before I ask my question that with all due respect to the very accomplished people on this panel, none of them in my view represent my interests. And the only way that my interests are being injected into this discussion is through people having the gumption to stand up and say things that you don't want them to say, and you don't want them to be talking. So that's my comment to you on the format of the meeting.

I read this consent-based siting report that the Blue Ribbon Commission put out a couple of years ago, and I asked myself is it possible to imagine that a truly informed community in which the local officials have not had their integrity and independence suborned – that is fully informed – would actually consent to a nuclear waste storage facility? And I'm not able to imagine that. And having thought about it for a couple of years, and listened to you folks for the last two hours, I'm still unable to imagine it.

So if anyone would care to comment on just what could you say that would give some assurance that a community – an informed community, an independent community – a community that hasn't been paid off, actually would consent to host a radioactive waste management facility? Okay, that's my question. [Applause].

**Mr. Jim Hamilton.** Thank you for that.

**Mr. John Kotek.** Let me start with the comment about the format of the meetings and the panelists. We try to mix it up each time. If you'd seen the one we did in Boise, for example, we had the spokeswoman from the Snake River Alliance there – they call themselves Idaho's nuclear watchdog; so maybe that was more the perspective you were looking for, I don't know. We've tried to get a different set of perspectives at different meetings.

On the subject of what community might be willing to take this on – we'll see. One example I'll point you to, if you're interested. I really like the book, *Nuclear Reactions* by a guy named Chuck McCutcheon. Which talks about the history of the Waste Isolation Pilot Plant site in New Mexico, which really started with interest expressed by the community in the early 1970s, and of course the facility didn't open until 1999. So I'd read that. That's one. There are probably others, but that's one I'm familiar with that you might find at least interesting.

I lived in a community in Eastern Idaho which plays host to the Idaho National Laboratory and that's certainly a community that welcomes new nuclear initiatives. I'm not trying to speak for them on waste, but when it comes to other things. Now, of course, the lab has been there for more than 60 years. It's ingrained in the community – think what you will about why people support it – but I can tell you that I've lived in a community that embraces nuclear missions, broadly speaking.

**Mr. Jim Hamilton.** Thank you. Jan, you're next. And then the gentleman here, George. Can you wait for a mic, please?

**Ms. Jan Boudart.** I asked the same question last time. John said that we've got the technology and resources to deal with nuclear waste. And I question that the technology is available. And so I guess it's those last two slides about the underground thing and the boreholes that you're referring to.

And then, this question was answered. I was very interested in Shelley's report, because from what I understood, you said your whole tribe is getting ready to move. I thought I might have misunderstood that…

**Ms. Shelley Buck.** Yes, you did misunderstand that.

**Ms. Jan Boudart.** That you bought some land outside of St. Paul, and that you are starting to move the people there?

**Ms. Shelley Buck.** No, we're not. We just bought the land, in case we needed to. Currently, all of our land is either swampland in the 100-year plain, or next to the nuclear power plant, so we deal with things from all over, on all sides; so we bought land because of the 2003 Agreement. It was a legislative bill that went through. We have the option to buy up to 1,500 acres within a 50-mile radius in case we need it to relocate our tribe. And we are just starting the process, finally.

**Ms. Jan Boudart.** And you are actually considering this? I think that's absolutely amazing.

**Ms. Shelley Buck.** We have tribal members who don't want to – they want to move back home, but they don't want to live next to the power plant and the waste, so we need land away, in case – and we don't know what we're doing to do with the land – I want to make that very clear – I'm sure you guys have read all the articles that have been out there saying we're going to do this and that. We haven't decided.

**Ms. Jan Boudart.** This is the first I've heard…

**Ms. Shelley Buck.** Honestly, we haven't decided what we're doing with it. It came available, it was a good deal. We decided to buy it. We'll figure out what to do with it later. Purchasing the land is the first step. In case we want to do housing, our people can come home and feel a little safer for being further away from the plant. So no, we're not currently in the process of relocating. Just in case we needed to.

**Ms. Jan Boudart.** Okay, and then I have just one little teeny question for Mr. McCullum. You made the statement that – okay, I wrote this down separately. That the United States is the best democracy ever, etc. etc.

**Mr. Rod McCullum.** The strongest.

**Ms. Jan Boudart.** Okay, the strongest democracy ever. And something like that – a statement like that – really rubs me the wrong way, because nobody can disagree with that and you can't prove it. And so I'm just objecting to that – the nature of the statement.

**Mr. Rod McCullum.** I respect your objection – and it's the way I feel, you know.

**Ms. Jan Boudart.** Yes, it's the way you feel, but you didn't state it that way, you said this is a fact…blah, blah, blah.

**Mr. Jim Hamilton.** We're going to keep going on.

**Mr. John Kotek**. I did want to ask Kathryn in fact. So you asked about technology, and do we really have the ability to store and dispose this stuff right? And so I don't want to drag this on for too long – let me ask – there is a gentleman sitting behind you named Peter Swift. I'm going to ask you to talk to Peter at the break about what we do to analyze both the storage location itself, and what we call the engineered barriers, so you can at least hear from him "Here's how we go about showing the regulator and the public that we can do this safely." Alright? But that's a long conversation.

**Mr. John Tuma.** Even though I'm an individual, I think it's the dumbest idea that we created this mess in the first place. I am absolutely convinced that we do have the intelligence and the technology to get this stuff put away and stored appropriately. It was there during the 9/11 stuff; we have had several reports from people that are far smarter than me, and I can tell you I'm fairly convinced that we do have the technology to move and store this stuff safely in repositories. The intelligence is there – the will just hasn't been there.

**Mr. Jim Hamilton.** Thank you. I've got the gentleman – I'll get to you in the second, and then I'll get to you.

**Mr. George Crocker.** My name is George Crocker. I'm the Executive Director of the North American Water Office. We've been involved with these issues for quite a while, including the 1994 Prairie Island nuclear waste fight that Commissioner Tuma was speaking of.

And I guess the question that I have has to do with – granted you can make the argument that the technologies are there, but I think if you look at the history of nuclear waste management, we could draw a legitimate conclusion that it's pretty fraught with failure, all down the line. The WIPP site, for example, has been cited a couple of times here already. Well, they had an explosion. You know, that blew plutonium out the front door. That's this really sophisticated nuclear waste process that we have.

So there are technology problems ongoing with all of the technologies that have been proposed. Meanwhile, we continue churning out ton after ton after ton of irradiated fuel that nobody really knows what to do with yet. And so, the question I have – and this is to you John, I guess – is it reasonable to conclude that the primary purpose – or a primary purpose – of this consent-based siting process is to provide a thin veil of legitimacy to continued nuclear operations so we can pretend that we have a program to manage the waste at the backend while private – primarily private – interests can continue making billions and billions of dollars off of the production of this waste that nobody knows what to do with? [Applause]

**Mr. Jim Hamilton.** Thank you.

**Mr. John Kotek.** And I appreciate that. And that's a sentiment we've heard various places. The fact is that this stuff exists. Right? Now if I could snap my fingers and stop all of the production of nuclear waste in the United States, we'd probably have about 85,000 metric tons of waste to deal with. And I know they're going to be disagreements in this room as to whether nuclear power is worth continuing. We're not here to litigate that tonight. We're here to try to find a solution to the fact that we do have this waste.

We get the waste from commercial plants. We get the waste from government activities. We need to provide for safe, long term management and disposal of that material.

And so, appreciate hearing your input on that, because that what we're trying to get to.

**Mr. George Crocker.** Can I have a follow-up question?

**Mr. Jim Hamilton.** Actually, we've got a lot of people who want to ask – maybe during the break, you can follow up. But I've got – I'll get to you all in a second. I've got a gentleman here in the short-sleeve shirt and then I've got Lisa coming later, alright? Then I've got you, and then I've got you. Alright. I'll get to you.

**Mr. Scott Thompson.** Good evening. I'm Scott Thompson. I'm a local – I just live here locally in Minneapolis. So I'm just a private citizen.

But I want to ask a quick question of Shelley. Shelley Buck. You seem to be an expert in this area. And since you're from the area and you represent a tribal – a tribe, am I correct? Have you considered being a site-based – would your tribe consider your site as a place for nuclear waste to be stored?

**Ms. Shelley Buck.** First, I want to say that I'm not an expert in this. I'm just an expert in what we deal with. And the issues that we deal with on Prairie Island.

To answer the second part of your question, no. We've spent too much money trying to get it off of our Reservation, or away from our Reservation. You have to understand – that's our homeland. That's where my ancestors were born, lived – even buried underneath the exact spot where the plant sits today. So no, that is our homeland. Our elders will never move from there. They will die there, no matter what happens. So no, we would not want consent-based siting for us.

**Mr. Scott Thompson.** The reason I asked that question is that on numerous occasions they've mentioned tribal lands and my thought was that if they couldn't convince you, I'm just curious how difficult it would be to convince others.

**Ms. Shelley Buck.** Each tribe is different.

**Mr. Jim Hamilton.** We're just going to allow one question per person, if that's okay. You can make it quick.

**Mr. Scott Thompson.** Ask John Kotek. What are they going to do with Yucca Mountain – according to Rod – there is some opportunity that, after we've spent these billions and billions of dollars – if we can't convince them, and we already have the facility, I ask how difficult is it going to be to convince others? And what will your approach be – will it be different? Is this part of that difference?

**Mr. Jim Hamilton.** Thank you.

**Mr. Scott Thompson.** Thank you.

**Mr. John Kotek.** On the specific question of Yucca Mountain, you know the Secretary of Energy, and the Secretary of Energy before him, declared the project unworkable. They asked us to start on the design

of a new process. That's what the Blue Ribbon Commission advised on – how do you go about this? And their number one recommendation was engaging in the consent-based process; don't try the top-down anymore. That's what we're here to do tonight is to just figure out how we can design that process.

**Mr. Jim Hamilton.** Okay. Ms. Janairo, I think you're next. Then I've got the gentleman in the brown shirt. And then I've got you. And then over here – I see, I've got that, too.

**Ms. Lisa Janairo.** My name is Lisa Janairo. I'm with the Council of State Governments, Midwestern Office. And I guess my question will go to John Kotek and Ms. Shaver, I'd like to hear your comments, too.

I think it was Mr. Scott who mentioned the need for transparency and engaging the people who are going to be affected by the activity, and also making sure that information is available in a lot of different ways.

So my question is, as I look around the room, I see that there are some Millennials here, but not a whole lot. I haven't seen the audience of the other seven meetings, but I'm just wondering what are you doing to reach out to Millennials because they do communicate differently than the people of the average age in this room. I just happened to look on Twitter, hashtag consentbasedsiting [#consentbasedsiting]. I see there are quite a lot of tweets, but they seem to be like three people doing all the tweeting, and not one of them seems to be an official Department of Energy twitter account, so the question is what specifically are you doing to try to bring Millennials into this process, and Ms. Shaver, what have you done in Canada as well?

**Mr. John Kotek.** I'll start quickly. Lisa, you're exactly right, and frankly when we do these meetings, we tend to attract people who have been immersed in the issue for some period of time. Getting new voices into the discussion is a challenge for us. We are looking at doing some things outside of this sort of a process where we would specifically try to draw in people who haven't been engaged in the nuclear waste issue over time, so more to come on that; but we recognize that it's something that we need to work on, and I would be very interested to hear what Kathryn is doing, so we can steal it.

**Ms. Kathryn Shaver.** Thanks, John. So we've done a number of things over the years. When we were first designing our plan and processes, we tried to reach out a lot in terms of university classes; sponsoring post-docs and getting people – building capacity and interest in the system to be part of this, and challenge and be peer reviewers of the future, and we continue to support that at the university and the college level.

After we got into the siting process, though, we struck up a Youth Roundtable to critique us as a company. And it was brutal. They said our brochures were sort of corporate corny and we were out of date in terms of digital media and so forth, but we took the harsh criticism and we've been implementing the recommendations.

Now that we're working with interested communities within each of those areas, they're sort of designing themselves – how they want to get students involved – sometimes science teachers ask us to come in or support a briefing, or to make a site visit. So we're not trying to lead that – we'd like the communities to identify when students and young people would like to engage.

Really important contribution, however, at the youth level, is being made at our Council of Elders. And since 2005, we've had aboriginal elders invited to sit with us. They're from across the country, not because they're pro-nuclear; some of them do not like nuclear. But they're there to advise us on respectful engagement – respect for treaties, rights – and also how to appropriately embrace indigenous knowledge and interweave it with contemporary science, which in Canada is becoming more and more important that we try to be very open to different worldviews and our elders have advised on a policy, but they've further augmented their circle to call it the Elders and Youth Circle, so that we're getting intergenerational people sitting around the table preparing the decision-makers for tomorrow. And I actually think we're going to learn what the elders are doing there to see if we can build out our youth engagement elsewhere, so just a few examples.

**Mr. Jim Hamilton.** Thank you Kathryn; thank you John. Gentleman in the brown jacket.

**Mr. Andrew Jameton.** Hi, I actually appreciate your presentations very much. My name is Andrew Jameton. I'm a retired philosophy professor from the University of Nebraska; and a longtime member of Physicians for Social Responsibility.

I've had trouble formulating my question. I think it might go to Kathryn Shaver. I'm interested in what sorts of communities are coming forth to volunteer – do they have common characteristics in some ways?

I'm also curious as to why Native American communities are appearing so high on the list of involved communities since there are lots and lots of people in lots and lots of places in communities.

And also whether – and the same question for John – do you start with finding the best places and then seeing how it goes with the communities, or are we going to look for the communities of interest, and then find the best places in terms of engineering criteria?

**Mr. Jim Hamilton.** Thank you.

**Ms. Kathryn Shaver.** Thank you for that question. Let me just comment a little bit about the kinds of communities that have come forward with interest. And I have to say they haven't signed up to host, but they are in to learn. Many different backgrounds. Out in Saskatchewan, in the West of Canada, there were three communities that came forward. Two were aboriginal communities with familiarity with mining – uranium mining – another community out there is also involved in industry.

So, but right now, our focus is on Ontario. We've narrowed down sites – all of our sites that we are looking at are in Ontario, where over 90% of the fuel is created as well. The communities are vastly different – they go across the North and right down into the South, and their interests stem from different reasons. Some of them think they have mining experience to bring, or that they are strategically located in terms of the transportation infrastructure. There is a lot of diamond mining; gold-mining up in Northern Ontario. There are others who have made livelihoods by the resource sector for many years. The boom and bust of mining, but also forestry, and they're interested because of the sustainable nature of this. An operation that would be going for 40 years or more; and then a monitoring period. Many communities are interested in the high-value-added jobs for youth, and that's something all of them share.

In the South, there is familiarity with nuclear plants. The three communities in the South live near a Big Bruce nuclear operation, and are interested in contributing to a different part of the fuel cycle.

So they are vastly different. They would have their own narrative to tell you themselves if they were here.

What was the second question? I'll just speak quickly to Canada, and then I'll pass it over to John. In Canada, aboriginal people are under the Constitution afforded special rights, and any large project like this would have to engage, consult, accommodate First Nations; but we've moved beyond that model. We're actually looking for partnerships. The aboriginal communities that are engaging in some areas expect to be treated, more than consulted. They would expect that if they were ever interested in such a project, they would have to give consent, but they would also be treated as a partner on mutually agreeable terms.

So in Canada there is a big focus on involving aboriginal people – I think without going into too much history, we've for many years studied the technical repository concept, and it even went to a 10-year Environmental Assessment, and didn't pass because there was a lack of social acceptability in Canada to move forward and we started over. And a clean slate. And it has to involve people from all walks of life, but including aboriginal people.

**Mr. John Kotek.** And certainly with respect to working with tribes or frankly any community, partnership is a great word because that is really what we think we need to have. Just to get to the last part of your question about kind of how you go forward.

What we're envisioning is we would start with sort of a generic set of criteria – considerations, I should say – in terms of what we're looking for. There will of course have to be regulations put in place and standards put in place by EPA and NRC – both have roles here and those will ultimately dictate whether a site can be shown to be suitable, but we want to start with by at least giving communities a sense of what it is we're looking for, but not to go so far as to try to characterize sites in any meaningful detail, and then approach a community. It's really more about giving them a sense of what we're looking for; have the requirements out there fairly early in the process, and then work with communities; first, to see if they might be willing to enter into a partnership with us, but then..[Interrupted].

**Mr. Andrew Jameton.** Do you have any roadmaps of any sort…?

**Mr. John Kotek.** I mean, for example, you can look at things like – we're doing research in salt, hard rock and clay – shale formations and formations like that underlie a lot of the United States – if you're interested in learning a little more about that – I pointed Peter out a little earlier. There's also a gentleman named Bill Boyle. Where's Bill? Bill is standing in the back if you want to kind of get a sense of what might be suitable, by talking to them at the break. Thanks.

**Mr. Jim Hamilton.** Thank you. Just a quick schedule check. We're comfortably blowing through our schedule a little bit aggressively here. We're 15 minutes over. I want to honor the Q&A session, so we're going to try and make up for some of this on the back end. But still honor our commitment to get you out of here around 9:30 PM, so bear with us, please.

I've got this young lady over here, next. You want to give her a mic? Then we've got – okay. I've got you.

**Ms. Elena Tran.** Hi. My name is Elena Tran, and I'm a student at the University of Minnesota right now, studying Environmental Sciences. And I'm not super familiar with nuclear energy. And this is kind of related to a previous question, but I guess I've only heard comments about what the risks are for having a

site or a storage facility. So I just want to know – I just wanted clarification about what the benefits are to having a storage facility? Because Ms. Buck talked a lot about all the negative impacts, and I just want to know a little bit about the benefits of having a storage facility.

**Mr. Jim Hamilton.** Thank you. Who wants to take that?

**Mr. John Kotek.** [Addressing Ms. Kathryn Shaver]. Kathryn, are you far enough along that you want to talk about that?

**Ms. Kathryn Shaver.** I can talk a little bit about what's involved as an economic enterprise, and it may be different in the States, so I can only speak about what the Canadian project looks like.

But what it involves is actually more than just an underground repository. It's about a $20 billion project that we would be building in Canada. It could be transformational for an area. Which can be good or bad, depending on whether you want to grow or not.

Apart from the underground repository, there will be a lot of facilities – container manufacturing facilities; a lot of support; a large center of expertise, which apart from a visitor hub, will be a hub for Canadian and international scientists who will come to work on the project and be many things, so there's a lot of excitement in terms of high-value-added jobs.

A caution quickly to say that that big enterprise may not be for everybody, and when I mentioned the importance of doing visioning exercises with community members – does everyone want to grow that way? – some people live in the North because they like smaller communities; they like outfitters; they like fly-in fishing camps, and they might not want a big concentrated industrial area brought in, but they're also interested in distributing some of those facilities across a broader region and sharing some of that – that's just the economics.

And I think people would also like to think there are opportunities for youth, and they don't have to leave. The only industry might be forestry right now; so it’s a chance to bring something else.

But it's really for the communities to decide what they see as the benefits, because ultimately they are the ones that can shape what community well-being looks like, and we’re not in a position to do that. John?

**Mr. John Kotek.** An example that you can point to in the United States is the Waste Isolation Pilot Plant, the WIPP Facility, in New Mexico, and I'm going to look at Peter while I say this, except he got away. Just because he lives in New Mexico, and he'll know the numbers better than I do, but I believe that it's been on the order of 400 jobs in that particular community. I believe the state of New Mexico got – I want to say it’s between $10 million and $20 million a year in road improvement money over a 20-year period. There was a new arm set up at the state university to provide independent oversight of the WIPP project. There was another arm set up in the town to provide for environmental monitoring of the facility. So there were things like that I think were part of the reason that the community saw this as an attractive mission to pursue.

**Mr. Jim Hamilton.** Thank you. So I've got one here; then over there and then on the side there; so I've got three and we've got about 10 minutes, so we'll probably get through those, and maybe time for one or two more. Okay. I’ve got you.

**Ms. Carol Overland.** Thank you. I'm Carol Overland, and I'm an attorney, and I represented Florence Township when Northern States Power and Xcel tried to put a nuclear waste in the Township – and that was a five-year struggle where it was clearly demonstrated that nuclear waste doesn't belong anywhere.

About seven years ago, I was involved in a fight about a coal gasification plant on the range here in Minnesota. And there was a coal gasification lovefest that was organized by promoters. And at that lovefest, there was a panel, and on that panel there was LeRoy Koppendrayer, who was at the time the Chair of the Public Utilities Commission. And when I saw that, I contacted the Public Utilities Commission, and I said, you know, I don't think it's really right that someone from the Public Utilities Commission be at a promotional activity like this.

Well, I'm concerned about that here as well, because Commissioner Tuma gives the impression, by his attendance here, of his support, and it's really important that the Public Utilities Commission be impartial and our rules; specifically, 7845.0400 and 7845.0700 about activities that commissioners should work really hard to avoid any impression of bias or that they have a preconceived notion about this or support what's going on here. So I'd like to protest these aspects of the rules. And I just don't think it's appropriate to be here.

**Mr. Jim Hamilton.** Do you want to answer that, Commissioner? Okay, alright. I've got – in the back of I've got the gentleman there…and then I've…

**Mr. John Kotek.** If I could, just to that last point – I will point out we have had and – we've tried to get a diversity of views at all of these. We are not asking for support, as you can tell from this panel. We've had quite a number of critical comments about the Department; its history on this project. What we're looking for is a range of inputs so that we can develop a very informed process that gives us the greatest chance of succeeding. We're not looking for buy-in on any particular aspect of that process right now, so this is about gathering input, and we appreciate the input we've gotten from everybody.

**Ms. Carol Overland.** The Public Utilities Commission repeatedly has nuclear issues on his agenda – that's the job – and that doesn't address whether or not there should be commissioners participating. Whether they're doing it all over the country – maybe they shouldn't be doing it all over the country. I'd urge you to think about that. Thank you.

**Mr. Jim Hamilton.** Thank you. I've got the gentleman in the back here who has been waiting patiently, thank you.

**Mr. Charles Baynton.** Hi. My name is Chuck Baynton. I'm a recent immigrant to Minnesota from Wisconsin. In Wisconsin last year, the state legislature changed our law about nuclear waste disposal. There was what some people mistakenly called a moratorium in Wisconsin on the siting of new nuclear power facilities in the state until there was a permanent deep geologic repository established somewhere in the country – that was repealed last year. That's the origin of some of my interest in these issues.

My question is for John Kotek. And it has to do with the fact that this evening's meeting ends this process of about eight meetings around the country, and that the Department of Energy seems to have recognized the need to get public input. So I want to ask Mr. Kotek to defend the proposition – if he so chooses – that this process of meetings has given meaningful public input in a meaningful amount of the American

public, given that there've been eight meetings – why eight? – around the country, and judging from the audience here tonight, it might have involved some 800 out of 300 million Americans.

**Mr. Jim Hamilton.** Thank you.

**Mr. John Kotek.** Thanks for that. And we, of course view this as the start of a journey, okay? Yes, we're doing public meetings; we're webcasting our meetings; we're using other forums to solicit input from people and of course we've made a lot of information available on our website, for example.

What we intend to employ is a process where, you know, we get input; we're going to get a report out, as I mentioned earlier – the first thing we'll put out is a report that summarizes the major themes we've heard from this. It will be put out for broad comment – by anybody who cares to give us feedback on that, will do that.

We'll then put out a draft of a process for consent-based siting. Again, we'll put that out for input; take comments from anybody who cares to offer it.

So how we reach larger numbers of people is going to be a constant challenge for us going forward. We're trying to both employ some new tools and learn some things that other people are doing, and so we'll continue to try and broaden that circle of folks who are interested and informed of the issue and are providing us input and frankly any thoughts you care to offer that will help us in that regard would be greatly appreciated.

**Mr. Jim Hamilton.** Thank you. I've got the gentleman over here on the left, and then over there on the right, thank you.

**Mr. Austin Simms.** Hi, my name is Austin Simms and I'm a concerned Millennial. And I'm also here with my friends from Nukewatch.

My question is that we've kind of touched on the communities that would be affected in transit should the radioactive material be passed through those communities, but we haven't gotten really detailed about it, and so in transporting radioactive material, it doesn't cease to be radioactive until it reaches its destination – it's radioactive throughout the entire trip.

So if we are attempting a consent-based process, is it not also important to have the consent of the communities who are not host sites, but are still part of the process, and may not be aware of these plans – to be aware that this material will be passing through it, and how do you plan to attempt to gain that consent?

**Mr. Jim Hamilton.** Thank you. John?

**Mr. John Kotek.** As I mentioned earlier in the presentation, transportation is handled differently, right? The way we work to ensure that the public's health and safety is protected and that people's concerns are addressed is we work with state and tribal officials on training and emergency preparedness; on route selection; on monitoring; to ensure that the route is ready; that the transportation is done right; that should something go wrong, that we are in a position to respond to it.

Are the communities aware of that? As we go forward, of course, things like transportation route selection – those things will be part of this larger effort of working with state and tribal governments through something – we call it the 180(c) process – there is something mandated by the Nuclear Waste Policy Act that we work with these organizations. When you get to specifics of when is something moving on what route, then you start getting into protected information, because of course you don't want to make that information available to somebody who cares to do damage to a shipment like that, okay? So there is a different, well-established process for dealing with the transportation issues. It's been borne out actually with this thing we call WIPP, the Waste Isolation Pilot Plant, where there have been more than 10,000 shipments made to WIPP over the last 15 years working very closely, again, with state and with tribal law enforcement and emergency preparedness.

**Mr. Jim Hamilton.** Thanks. I've got a question in the back and I think that's probably going to unless – I'm sorry, you've had your hand up for a while, so it's there, and then there, and then we'll go to a break. Thank you.

**Ms. Helen Waquiu.** Hello, my name is Helen Waquiu and I'm enrolled tribal member of Jemez Pueblo in New Mexico. I do not speak for everybody in my tribe, but I am a concerned citizen – which is equivalent to saying I am a concerned U.S. citizen.

My question is, and I feel it will be deferred, just based on some answers, but where I come from, our people have been there for thousands of years, and we have a long history, so I feel for President Buck's concerns and everything her people have had to endure. I have an environmental and scientific background, both academically and professionally, so my question is related to the type of data and scientific information that you have or are currently collecting, because models can only predict so far and only are as good as the data that is given to them.

So my question is related to that. I feel like there's not enough information. The data that has been collected is uncertain at best, so that type of information would need to be shared. What type of data are you collecting and sharing with communities that would potentially be host sites?

**Mr. John Kotek.** Thanks. At this point, of course, we haven't gotten to the point where we have selected host sites or even begun the process of looking for them.

As we go forward, of course, there will need to be information provided on things like the amount of material; the amount of radioactivity involved; the methods that we use to protect, again, people and the environment from the radiation inherent in that material.

When you get even more into the siting of a repository, you're going to get into a series of very extensive site characterization activities – I'll point to Bill Boyle again; the gentleman standing back over your left shoulder was extensively involved in the Yucca Mountain project, for example, so can talk to you authoritatively about the types of work that went on there to look at the geologic and hydrologic and seismic and other conditions at the site. All of those things will be required to show that whatever site is selected – or sites are selected – for storage or disposal can satisfy the EPA standards and the NRC regulations in the case of a repository, and so that will have to be part of a public design and license application that is submitted to the regulator. So a lot of work needs to be done.

And I'll just agree with you that we believe that the collection and dissemination of that information is going to have to be done in a transparent way so that it's accessible to people who want to be informed about those details.

Yeah, and on that subject there is a performance evaluation that's done, and again either Bill or Peter can talk to about what goes into that and the type of modeling and other tools that are used to can give you the assurance you need that you can meet the standards.

**Mr. Jim Hamilton.** Great. We've got one final question at the end, and then we're going to go to break. Thank you for your patience.

**Unidentified speaker.** One thing I don't get is if the DOE has no answer for disposal of waste for decades and you're getting sued right and left because you haven't been able to, why are new plants, at least one new plant I believe outside of Atlanta, Georgia, is that right? Why are they allowed to be built? [Applause].

**Mr. Jim Hamilton.** Thank you for that.

**Mr. John Kotek.** That's actually a question that goes to the responsibilities of the Nuclear Regulatory Commission and not us, because they are the licensing authority for new plants, so I'm not going to try and answer that now, but I'm going to point to Rob Howard – that handsome guy to your right – he can talk to you a little bit about the NRC and their licensing procedures.

**Mr. Rod McCullum.** I would just add that the NRC recently ran a very significant proceeding on just that very question called the Continued Storage Rule and it's one of their regulations. That rule was litigated – the courts have upheld that rule – it looked at very long-term storage of waste – they did a full Environmental Impact Statement, so that question has been looked at in great depth by the Nuclear Regulatory Commission.

**Mr. Jim Hamilton.** Alright. Thank you very much panel members and audience. We're now going to move to the break, but before we do, I want 90 seconds of your time to explain what happens when you come back.

Take a look at your blue folders. On your blue folders, on the top right-hand corner is a number, alright? When we come back from the break, we're going to break into small groups to dig a little more deeply into the issues you've heard about. They are going to be facilitated by neutral facilitators – if I could ask them to raise their hands – so those are the folks in the back. Their job is simply to help these small groups have productive conversations. There is no prescribed topic for this. You can go down whatever path you want to. If you look in your folder, there are some suggested probing questions to get you started. You can use these or not. It's up to you. But the goal of these small groups is to take the input you've heard today and from each other and to dig a little more deeply.

At the end of those small group discussions, there will be a report-out period. And that information is going to find its way into a summary report of this meeting. We found these hour-long sessions, give or take, to be very productive in the past seven meetings, and we hope for the same here.

Following the report-out session, is an opportunity for public comment. If you want to make a public comment, there's a sign-up sheet outside on the registration desk and I ask you to fill that in during the break.

For those on the webinar, facilitated small-group discussions do not make for good television. So we are going to pause the webinar and bring it back up during the report-out session.

So with that, a 10 minute break – we're a little over schedule – so a 10 minute break – restrooms are out the door to your left. We will meet back here in 10 minutes. We will resume the webcast in about 65 or 70 minutes. There'll be a little sign on the webcast when it's back up and running.

With that, we are on a break, thank you very much. See you back here in 10.

**Small Group Discussion Summary Session**

**Mr. Jim Hamilton.** We are going to proceed with the report-out session. It would be great if we could all assemble and listen to what it is you've all talked about for the last hour.

Take it away, Mr. Olsen.

**[Facilitator 1. Mr. Bill Olsen].** Good evening. I'm reporting from Table 1. Fascinating discussion at this table, and as we recorded it, no single item came out. But in the final kind of asking my group, some really good things kind of jumped out.

The first one here is – I'm going to use the word "impossibility." There is a feeling that it is impossible that you'll ever get consent. There is such a matter of lack of trust and not only the Department of Energy, but in the industry was actually called I believe, "the Nuclear Corporate Reich" – that they're essentially in partnership together – and what needs to be achieved is in order to establish consent, you really have to define ***that***. And you have to deal with trust. And you have to overcome this lack of corruption.

And another issue related to this is this disparity between the benefit of economics of those who produce nuclear energy versus those who are going to be handling the waste. And that allocation is very uneven. And so in order to establish consent, that allocation really needs to be addressed. How can you get to the trust? How can you have a consent process that can be trusted, and how can this allocation really be equalized?

So I want to just kind of squeeze in here and there, and then at the very end, it kind of came together.

Another one here is – keep the focus on waste. Define that this is only about waste. And it's very easy in these table discussions for things to come up about whether it's about transportation; whether it's about new power plants; whether it's about economics – but in order to have consent, it has to be very, very focused on defining the waste.

The next one – I love this one – is safeguards. It's kind of a new one I've heard in these meetings. It's not only so when you have consent, the process should not only have very specific procedures; the right to back out at any time, but there needs to be compensation – and I wrote "compensation times two." Compensation for the communities; let's say the siting has passed, and then later on something goes wrong. But also for a community who goes through the process and then decides that they do not want consent; they should also be compensated.

So there really is kind of removing some risk from them.

The last item here – the information flow needs to be very thorough; very wide; very informed – the grants process needs to be included. So those communities that may not have the resources will gain them.

And here's where the risks – we talked about that a lot. What are all the health risks? How can they be adjusted internally, externally in any number of ways? And what might be the benefits – that wasn't still very clearly defined. So that was from Table 1. [Applause].

**[Facilitator 2. Mr. Chip Cameron.]** Are we going to Table 3 or are we going to Table 2? Table 3.

Okay, my name is Chip Cameron. I was the facilitator for Table 3 and as you might see behind me, I have about eight charts and all of that will be captured in the report-out from Table 3, but the most important points the group at Table 3 wanted to tell all of you about are when the community says "no," leave. It's over. Leave when the community says no.

Secondly, those who consent must be informed and able to make an informed decision.

Third, models must account for worst-case scenarios based on known or accepted standards that we don't have right now; although John Kotek talked about some broad standards. And this worst-case analysis not only includes the scientific aspects, but it includes the economic aspects in terms of will the jobs really be produced? What happens to the tax base?

Another point – there is a need for the community to have independent resources provided, so that they can hire their trusted experts and those dollars also should be used for things like – if there are public meetings that the community holds to explore the issues, that there should be money, for example, for daycare providers so that people can come to those particular meetings.

Another important point is that it can't be a one-size-fits-all. Communities are different, and so that has to be accommodated in the process.

And the last point is – is it fair to the majority of people – and there have to be multiple ways to give people in the community information; understandable information, and also for the leaders of the community to get a sense through a survey; referendum – whatever – of how the public reacts; thinks about that particular proposal.

And that was the most important points that came out of the discussion, but as I mentioned we covered a lot of ground and it was all constructive. So thank you Table 3. [Applause].

**[Facilitator 3. Ms. Susan Nurre.]** I'm Susan Nurre. And I was over here with Table 6. And a lot of people said that they were just observers – when we were introducing ourselves, they changed their minds quickly.

So, what they wanted to share with the rest of the group – is one of the things we talked about was transportation. The accessibility to the site; are transportation routes already available to any site? That's something that needs to be considered.

Also, for the impact on the country, because the more number of shipments they go through an area, it is going to require more training; more emergency response information, and so that all needs to be taken into consideration.

And also, not just the routes, but the mode [of transportation]. So an example was brought up about barging. There has to be – you have to think about the recovery, and all of that. So transportation was a big part of our discussion.

We also talked about the longevity of the decision. And we likened it to the dating process. So, you meet somebody and then you introduce them to the parents; and then you get to know each other better – same thing with this. So, it's an idea people are interested in it – they need to learn more. They need to court – old word – they need to get engaged, and at any time you can back out. And then when they get married, and they make the commitment – so, there also needs to be part of how you stay committed – and that might be like therapy. And then there is a divorce. And what are the consequences and what are the reasons you can get divorced?

So just the longevity and you need to be able to manage the societal changes.

We were fortunate to have Ms. Shaver in our group, and we talked a lot about the Canadian model. And she gave us some suggestions. We talked about what works for them, and we talked about how that may or may not work. But some ideas around the fact that they offer to educate anyone – to talk about what's going on – so if you're interested in learning about it, Joe Citizen can learn about what's going on. But they want what they called a "public official" or "recommended official" to kind of throw their hands up and say, "Hey, we want to be considered; put us into the learning cycle." So that person would start it, but they are only starting it. They have to have grassroots approval. Very important to go from the learning cycle to the assessment cycle. So we got some good information.

And then we talked about trust. And the fact that trust is earned through hard work; through third-party validation; through following through on your commitments, and one of the suggestions was when we are talking about validation and third-party – look to local public institutions; local universities that are already trusted by the community to help them be a part of dispensing the information. Thank you. [Applause].

**[Facilitator 4. Mr. Wayne Pendle]**. We're back up front. My name is Wayne Pendle with Leadership Strategies. I led Table 2. We had about eight to ten chart-papers full of ideas.

There was agreement over the three major top themes that came out of our discussion – it was around trust; fairness and roles. So let me just unpack these briefly.

The first one was around trust, and the issue of having forums other than just this. This is ***a*** way, but to truly have a multigenerational input into the consent-based siting process, events other than a public meeting on a Thursday evening needs to take place. So, using all the social media; multi-channels in order for communication to drive more understanding and trust. There was agreement among everyone at the table, that the more educated people are, the more informed decisions they can make. So there needs to be an effort to increase that.

And that came also with education at the local level. We didn't really get into a discussion of who might provide that, but there was agreement around the fact that that needs to take place in those communities.

This is where some of the divergent conversation took place. We all were in agreement that there was a trust issue, but there were several different ways that they said it could be solved. One was to reopen Yucca Mountain. That if the DOE truly wants to begin to build consent, it needs to start with fulfilling its current legal obligations that already exists. That would show a great step forward into doing it.

There were others that said – I don't agree with that, we just need to stop producing the waste. Opening up is only going to encourage more waste. So there wasn't agreement over that, but both conversations centered around the trust issue.

The second point was over fairness. That for communities truly to have a fair role in this process, they need to make sure they have: 1) access to funds to be able to do their own independent research as to the benefits and risks that are going into this. But there was some discussion around having funds available with some strings attached. And one of the examples that was given was the Wisconsin model that allows true stakeholder participation and the Intervener Compensation Funding Model was specifically talked about – that there are responsibilities, both in the giver of the funds and the receiver of the funds, to be able to do their due diligence together to ensure that those communities and those townships are as informed as they can be.

And the last one was over roles – certainly, it wasn't solved in our time together, but the issue was we need to define in the CBS process what a stakeholder is. What is involved in that? And who should be involved? And who has the authority to speak for who? There wasn't any solution; but certainly a conversation that needs to take place.

And the final thought from our group was that they were in agreement that trying to answer the five questions was not going to be done in 45 minutes and that there certainly needs to be more thought. However, there was a sense of urgency from everyone at the table that something needs to be done now and they were happy to make their contribution during that time. Thank you. [Applause].

## Public Comment Period

**Mr. Jim Hamilton.** So now we are going to move into the public comment period.

I've got six people who've signed up. I'm going to read their names in order, and we're going to follow that. Roger Cuthbertson, first; Susu Jeffrey, second; Kelly Lundeen, third; Karen Hadden, fourth; George Crocker, fifth and Jan Boudart, sixth.

Is there anybody else who wants to come up – okay, I've got one, two, three. Okay, give me your names now. Pardon me? Carol Overland. Okay. Judy Treichel. Is there a third person I didn't see? Carol, did you want to…? Are you going to speak? Do you want to? Alright, okay.

So here comes the fun part. We've got about half an hour to do this and we've got plenty of time. Before the meeting, Mr. Crocker and Ms. Boudart each asked for six minutes. And I said that would be okay, if I could get the group's permission to do that. I don't know if everybody wants to speak for six minutes. If the first six people could keep it to about three minutes. And the final two could get to six. I think we can be out of here by around 9:30 PM. If that doesn't work, let me know. I'm just trying to make this as equitable as I can.

How about if we try the first few at three minutes each; we'll see where that takes us. I was approached earlier to allow Ms. Boudart and Mr. Crocker to speak for six and we're going to try that, okay? Fair enough? Excellent. Thank you for your faith.

Alright. Mr. Cuthbertson. We have a microphone here, and if you look in the back, where it is Rob? So Rob is the handsome gentleman here in the suit jacket. He's got two pieces of paper. A yellow one and a red one. When he waves the yellow one, you've got 60 seconds left. When he waves the red one, it's time to pass the microphone on to the next person. That's how were going to keep time. Fair enough? Mr. Cuthbertson, you're up.

**Mr. Roger Cuthbertson.** I'm not sure I even believe in this process because I don't know how we – this small group – can speak for our community, let alone the entire planet; let alone the planet that has to live with these nuclear wastes for the next quarter of a million years or so, so that we can enjoy our partying with halfway cheap electricity and have the next quarter of a million years of people take care of our mess.

But anyway, what I want to talk about is the long – I don't think enough has been said about how long-lasting the dangers of nuclear waste are. Plutonium is just one of the substances in the nuclear waste stockpile. It happens to be around two million times more toxic than cobra venom. It has a half-life of 24,000 years. To render it not so radioactive at all and not harmful, you'd have to go through probably ten times 24,000 years. You're talking about a quarter of a million years.

My friends, the whole history of civilization, if you start with the beginning of writing, is only 8,000 years or so. Just imagine – we say we're going to keep this stuff safe, even with a hole in the ground somewhere with the best science, you still have to take care of it with buildings and different controls – it's an insurmountable task and I really agree that we're in this deep a hole, we should stop digging – we should stop producing nuclear waste altogether. We should stop using nuclear power. Stop producing the nuclear waste.

Anyway, I did some of what I think is kind of original thinking on this. I wrote a piece, several pages long, and all I want to do is hand this off to somebody that will read it. It says "Every nuclear reactor in the world – an eventual Fukushima or Chernobyl equivalent disaster. Think about the ongoing catastrophes of a Chernobyl and Fukushima. Now imagine the nuclear material at every single one of the world's 437 commercial nuclear reactors undergoing similar fates. Unimaginable? It will happen.

Again, every single nuclear reactor in the world will experience a catastrophe roughly equivalent to the disasters of Chernobyl or Fukushima, or the fuels and wastes associated with each of the world's 437 reactors will experience a disaster roughly equivalent to what happened at Chernobyl or Fukushima.

Here's the proof. And there is a formula: $Ft = P(1-r)^t$. Here it is. Anybody willing to read it? Thank you very much. [Applause].

**Mr. Jim Hamilton.** Thank you very much Mr. Cuthbertson. I've got Susu Jeffrey followed by Kelly Lundeen.

**Ms. Susu Jeffrey.** I'm Susu Jeffrey. I'm representing Friends of Coldwater. I am a water activist. I was arrested at Prairie Island; Seabrook; Diablo Canyon; Savanna River. I was a nonviolent trainer.

At Savanna River, I remember there was this dog that followed us around that had five legs. At the County Fair in that county, they had a special barn with freak animals.

There is no amount of nuclear crap that is safe. And I just want to mention that we are breathing Fukushima. We are breathing Fukushima fallout, right now.

We have two nuclear waste dumps right here. We are in the shadow of two of them. The Monticello nuke and the Prairie Island double nuke. The Monticello nuke is the Fukushima model.

When a glob of toxic nuclear stuff comes down the Mississippi River and it hits about Fridley, which is where the water intakes are for both Minneapolis and St. Paul, they just close the intakes temporarily. But the globs of nuclear toxins don't just come down in globs. They come every day in the air, and it gets in the water. Every day – every day. You might have noticed that cancer rates are going up. You have noticed that, haven't you?

My siblings are all dead of cancer.

I do not consent. Consent is this relative word. They got consent at Prairie Island – they sort of like wormed their way in. Some people say it was alcohol. Some people say it was money. It wasn't fair. And they're never going to get rid of it, because there is no even theoretical way – so far as I know; so far as the experts have talked about – to get the waste off Prairie Island, which is a floodplain in the middle of the Mississippi River.

Aspiration is not enough. It's just another word. We've heard hundreds of words here today. We are going to leave no trace. The trace that nuclear waste leaves is a footprint of death.

The river is burning. It's not that the river is burning. The river is going to be there. It was there before people were here. The first evidence of people in this area is 9,000 years ago – a bison spear point that was found at the Sibley House dig in Mendota in 1996.

What about the plants and animals? We haven't even mentioned the rest of nature. It's anthropocentric.

The solutions concept is not credible. It's completely not credible. Until you stop producing more waste, and until you dismantle nuclear weapons, you're planning for some kind of political fantasy. And we've

been through this; and been through this; and been through this, since 1939, when the nuclear program started.

This is a political fantasy. Consent is impossible. Because there is no truth in this process. [Applause].

**Mr. Jim Hamilton**. Thank you Ms. Jeffrey. Kelly Lundeen followed by Karen Hadden.

**Ms. Kelly Lundeen**. Hi. I work with Nukewatch in Northern Wisconsin.

So, just a comment on this process. I'd agree that it's – I feel like we're kind of being asked to be part of a fraud because this whole meeting and asking for "How are we going to build a framework for consent," is something that is just kind of silly. People have been giving and many, many groups have been giving comments about this for years and decades about what should be done.

And I'm just going to go real briefly about what a more positive solution would be, and there is no good solution. But a potentially better solution – there's the hardened on-site storage. Basically, right now, we need to establish an independent transparent process resulting in the construction of a permanent deep geological disposal facility as soon as possible.

The interim management of radioactive wastes at reactor sites using the hardened on-site storage and do not contaminate new sites through the creation of a central interim storage facility, which is what Mr. Kotek was speaking about earlier.

We need to transport the fuel once; from the reactor site to the permanent disposal site. And stop making more. And I understand that there are some potential exceptions for the hardened on-site storage. Prairie Island might be an exception. We might need to get that out of there now. And some other, more sensitive geological sites like along fault lines in California and other places.

There hasn't been a lot of credibility built on the part of the Department of Energy, and certainly not the nuclear industry. And all of this began many, many decades ago. The U.S. government's violation of the Treaty of Ruby Valley creating a Nuclear Weapons Test Range in Nevada and later on, the Yucca Mountain high-level radioactive waste repository over the objections and refusal of the Western Shoshone First Nation. And it goes on and on.

The BRC advised removing the Department of Energy from the process and instituting a new waste management entity; yet here it is – the DOE is convening this meeting. And numerous instances of ignoring public comment, as I mentioned before.

This is really not a problem of the government. This is a problem of the nuclear industry. The nuclear industry is looking for a bailout, and once again, here comes the government to save the corporations.

On consent – I'll just say there's another – as Susu was mentioning – there is no possible way to gain consent. I have a nine-month-old and a three-year-old. They're not being asked. Their grandchildren and great-grandchildren are not being asked about what we are going to be doing about this. Thank you. [Applause].

**Mr. Jim Hamilton.** Thank you Ms. Lundeen.  Karen Hadden followed by Carol Overland.

**Ms. Karen Hadden.** Hello, I'm Karen Hadden. I'm the Director of the SEED Coalition – the Sustainable Energy and Economic Development Coalition in Texas. I am here on behalf of the many people who cannot afford to be here tonight.

The DOE has now held hearings in Chicago; Atlanta; Sacramento; Denver; Boston; Tempe; Boise and now Minneapolis. These cities form a big arch across the country and the place that they miss is this huge big circle that includes Texas and New Mexico. It's as if we were a plague that they were running away from with all of their might. And at every single one of these hearings – I've been listening to them – at every single one, it has been portrayed that Texas and New Mexico want this waste. We do not consent. Let me say it again. We do not consent.

A speaker in Boise said no one wants radioactive waste. Well, that's exactly right. And that was one of the panelists. That's exactly right. And this whole thing is a shell game of who we can force it off to, and what pretenses we can create to make people feel good about dumping on someone else.

So the DOE could not manage to find Texas or New Mexico, and we know darn well that we are ground zero for the whole nation's radioactive waste.

The people in West Texas – largely Hispanic communities – not real wealthy; without resources to fight back – they know they are being dumped on. They don't need millions of dollars flowing in to help them understand the problem. That is an insult. These people are perfectly bright. They understand. They understand that they are being dumped on.

A few leaders have said that yes, we want this waste. These are people who tend to make deals that bring in money to the county; that bring in money to the state. But that does not mean that they are speaking for the people. The people do not want this waste in their backyard. I've spoken to the people throughout the state. Many, many hundreds of people.

Many resolutions have been passed. The Democratic State Party, actually, included in their platform "We wanted this halted. We want an end to this." So here is how that feels. It feels like asking consent from everyone else in the whole country about dumping on a largely Hispanic region in Texas and New Mexico. That is just plain wrong. That is environmental injustice at its extreme. Each train car – and this is according to Dr. Arjun Makhijani – would have as much plutonium as the bomb that was dropped on Nagasaki, Japan.

Now how do we feel about that going across the country? Everyone on transport routes is at risk. Moving this waste creates risks for everyone involved, from leaks; from accidents; from terrorist actions. Who says this? The NRC previously said that the least risky option was to leave the waste in place and to not move it because the engineered barriers are in place there, and when you put it on the highways or railways, you're introducing the unknown and increasing those risks. The thin canisters – a half-inch or so of steel – are never going to hold up to terrorist threats, and we all know it.

We all know – please put that down, I'm not done, thank you – I came all the way from Texas to be here, and I'm going to speak.

We spent a huge amount of money to make it to other hearings. Eight people spent about $400 to go to Arizona – the closest hearing. The DOE has slapped Texas and New Mexico in the face and we're not going to put up with it.

So consent is a farce. And asking everybody else how about shipping it to New Mexico based on a vote of five commissioners – four commissioners and a county judge in Andrews County – is a farce.

Everybody in the country would be at risk from the transport because of these risks and the site that this would go to is very close to the Ogallala Aquifer that lies under eight states. If we contaminate that aquifer, who knows what happens to the whole nation's agriculture; cattle; drinking water, etc. It's the largest U.S. aquifer. It is very close to the WCS site.

It is a farce to come in here and say we haven't picked a site. You sure have picked a region, and that happened in 2012 with the Blue Ribbon Commission. And that's in the documents that were produced that John Kotek was part of. Everybody knows this. Everybody knows that in April, Waste Control Specialists put in their license application. We cannot pretend that a site is not picked. That's on the Texas/New Mexico border, and there are thousands of people that live there. The region has temperature extremes; it has wildfires that come in and have come in real close to the site; it has inadequate security; inadequate monitoring – this is what so far is the impression of the NRC after looking at the license application, which was about 50% complete – not complete when they submitted their paperwork.

So this is an ongoing battle not to dump on another community. There is no need to consolidate this waste. It should be kept as close to the site of generation as possible. It may be moved a little bit due to the effects of climate change and maybe we have to move it a little bit – but do not haul it across the country.

In the world of who should determine consent. Every person in the Host County should get to vote. Every person in any county that is a transport county through which this waste would travel should get a vote. And every single person living on any aquifer that could be impacted should get a vote. That's who should talk. Not the governor of a state. Not the county leaders. The people need a vote. And for this process to happen after a license application has been submitted is a farce. This is way after the fact. There might be some validity here if this process was done, and then we started putting in license applications, but that's not what's happening and Texas and New Mexico and the many people I know are resentful of the DOE beating up on our states by going around the country and gathering support to dump on us. Thank you. [Applause].

**Mr. Jim Hamilton.** Thank you, Ms. Hadden. I've got Carol Overland and Judy Treichel. And then Allen – I don't have your last name.

**Ms. Carol Overland.** Carol Overland. I'm from Red Wing. The attorney that represented the Florence Township during Nuclear Waste Days. Louder? Represented the Florence Township during Nuclear Waste Days. And it's hard to believe that was 22 years ago already.

Interim – there's a lot of discussion of "interim" in the brochure that was handed out. But we know that interim is permanent nuclear waste – it is not going anywhere, unfortunately.

A point that I need to bring up is that the TN-40 and the TN-29 casks at Prairie Island – the seals on them need to be replaced every 20 years. Does anybody know if any of those seals have been replaced? It's been 22 years. And to replace the seals, you have to take the lid off; you probably have to dump it into the water; and that you have steam; and then you have – things are cracking. That's a present issue, right now, at Prairie Island, and if these are going to be moved, they're going to have to be opened up, and it's going to have to be put somewhere else. That's only been attempted one other time, and that was at INEL, when they tried to unload a TN-29, and they started pulling out the assemblies, and it turns out they were bent, and they got stuck, and they had to try to take them out, and they couldn't get them out, and they had to sit and think about it. Well, a couple days later, they came back and they tried to smash them in and they ultimately did get them back in, but they gave up on unloading the cask, because has a cask ever been unloaded? I don't think so.

And so in looking at this meeting and looking at consent and what does consent mean, I went to the SUNY definition of affirmative consent, and everywhere it said “sexual” I crossed that off and put “nuclear.”

So, “Consent to any nuclear waste, or prior consensual nuclear activity, between or with any party, does not necessarily constitute consent to any other nuclear act. Consent is required regardless of whether the person initiating the act is under the influence of drugs or alcohol. Consent may be initially given, but withdrawn, at any time. Consent cannot be given when a person is incapacitated, which occurs when an individual lacks the ability to knowingly choose to participate in nuclear activity. Incapacitation may be caused by lack of consciousness or awareness; being involuntarily restrained, or if monetary consideration is received and not publicly disclosed. Consent cannot be given when it is the result of any coercion, intimidation, force or threat of harm. When consent is withdrawn, or can no longer be given, nuclear activity must stop.”

So, that's it, and I'll send in some more written comments later. Thank you. [Applause].

**Jim Hamilton.** Thank you very much, Ms. Overland. Judy Treichel?

**Ms. Judy Treichel.** One of the things that we talked about in the group that I participated in was the need for a definition of the problem. What is it we’re trying to solve here? And they say that we’re trying to get rid of nuclear waste, but if, as Secretary Moniz said tonight in the film, it's necessary to keep nuclear reactors going, so therefore we need a place for the waste to go, that would mean that if I were to consent with my community to take the waste, I would be playing a part in keeping the generation of the waste going, and I would refuse to do that.

If it’s get rid of all waste, then the first thing we need to know is how much waste there is, which would mean you've got to know when the production of that waste stops, and then what the total would be. If that was happening, I would be willing to take part in discussions talking about what we would do with waste eventually.

If the Department of Energy really wants to begin a consent-based process and a program, it has got to get rid of the first and only nonconsensual site that's ongoing right now, which is at Yucca Mountain. And I was amazed at the report from over here saying that if you want trust, you've got to finish with Yucca

Mountain. That means that you have to prove to the world that you can take an unwilling host and ram this stuff down their throat, and be successful about having that done. That's absolutely insane.

Yucca Mountain is going to be the elephant in the room until it's gone. DOE can get rid of this elephant in the room simply by declaring Yucca Mountain to be unsuitable. It never said that. They've said it's unworkable. That's not in the law. Their only way out of this thing is to declare it unsuitable.

Once DOE honors and believes the public and the officials in Nevada, and calls that site unsuitable, then we can move on, and the Department of Energy – or whoever takes over – can be believed by people when they say you must consent, or we'll stop; we'll leave, if you don't give us your permission.

Not doing this means that you'll have continued distrust. You can't even right now – you being the Department of Energy – can't even do research projects that don't involve actual placement of nuclear waste. Both North Dakota and South Dakota have told the Department of Energy they are not allowed to do drilling research there because it could turn into another Yucca Mountain. So they're dragging this skunk as they're going from place to place.

The State of Nevada Legislature just last week approved another year of funding that's taking our taxpayer money to use to fight the Yucca Mountain Project. Nevadans agree with that – they want that to happen – and it's happened with Republican Administrations, with Democratic Administrations – both governors; attorneys general – it's always going to happen and we're going to keep doing that.

As the state continues research on nuclear waste issues having to do with Yucca Mountain, more and more contentions are being found and they're piling up and if licensing ever starts again, it's going to be a very long process because hundreds of contentions have already been accepted, and these just go on top of those.

Our only avenue is apparently in Nevada and is to make this thing take too long and cost too much. And that's what we're doing, and that's what we will continue to do. If Yucca Mountain becomes a finished deal – a done deal – and it never begins to address all waste with a defined end to production, then give me a call and I'll be helpful. [Applause].

**Mr. Jim Hamilton.** Thank you Ms. Treichel. Allen?

**Allen [no surname provided].** It seems to me that whenever a delegation from DOE or the Nuclear Regulatory Commission shows up in Minnesota for some kind of evolution or event, the people are very courteous; very bright; very gracious; very patient in the face of strongly worded criticism and so on.

But somehow it always has a feel to me that the nuclear industry is the dog and the tail is being wagged by the dog [and the tail] is the federal entities that are supposed to be representing the public interest. And that kind of bothers me. It would be – and I'm kind of repeating what other people have said – but it would be very useful and helpful to have a DOE delegation show up and present a program for the rapid phase-out of the civilian nuclear industry. It would be very nice to see like a rational program for the replacement of that capacity as it's shut down, rather than just totally passive reports from EIA saying that the future is going to be the same as the past.

And nuclear waste management is a very complex issue. It's complex economically; it's complex technically; it's complex politically; it's complex emotionally – it appears to be so complex on so many levels that it's insoluble. And I don't know whether it has to be insoluble, but I would like to see a proposal for solving this problem. For getting this waste somewhere where it eventually would be less dangerous and less harmful than it is now sitting around in pools and waste cask parking lots.

Rather than coming to us suggesting that we ought to help you develop a program to get communities to consent to the siting of facilities that are not in any obvious way part of any rational program for managing the issue, just isn't very satisfactory. I think you can and should do better than that.

And I guess that's all I have to say. [Applause].

**Mr. Jim Hamilton.** Thank you very much. So our final two speakers again, have asked for little bit more time, so Jan you were going to go last, if that's alright with you. I'm going to get Mr. Crocker to come first.

So it is little after 9:15 PM. We'll run a few minutes beyond our 9:30 PM, but I think we'll be able to wrap this up.

**Mr. George Crocker.** Thank you. My name is George Crocker. I'm the Executive Director of the North American Water Office.

I think it's fair to say that there's a dominant sentiment in this room – I daresay across the country – that we will not get our arms around this problem of what to do with this waste until we stop making it. [Applause].

Once we stop making it – once we stop rewarding the production of it – ***rewarding*** the production of it – then maybe we'll be able to identify the specific amount of volume that we have to deal with and maybe we can come to some agreement about where the sacrifice zone will be to safely isolate this material from biological activity forever and how to fairly compensate those presently in the sacrifice zone for their sacrifice.

So, what I'm here to do is to propose a process whereby we stop making the waste. And the reason we make the waste is because of ***utterly, utterly*** warped and perverted economic incentives.

Now part of that warped incentive has to do with the fact that we just externalize the cost of storage for a quarter of a million years. We externalize the cost of the exposure to the public. We externalize all of these health and safety issues. We don't count them. They're not included in the price of power.

But there is a price of power. At the warpage in the economic incentives that allow for the production of this material – we can address that. Straight up.

There is a Public Utilities Regulatory Policy Act. It's called PURPA. It was passed in 1978. It required the utilities – the electric utilities in this nation to purchase power – they are required to purchase power from qualifying facilities, which were defined as projects 80 megawatts or less – 80 megawatts is a lot of power – 80 megawatts or less – from renewable energy. And we fought that in court for over 10 years before it was settled law, and then it was. They have to purchase the power.

And so then the question was, well, what is the price? And the power companies, to this day, have argued successfully that it is essentially the cost of the fuel that they don't burn. Less than two cents a kilowatt-hour – not enough to cash flow – almost anything is a few PURPA projects; some good hydro ones. But not very much. But they are required to purchase it, but the price is too low to cash flow, so we don't do it.

Okay, that's one set of the economics that is in play here.

The other set has to do with the wholesale markets in the electric utility industry. We have a mature wholesale market in the electric utility industry. It's run through the MISO – in this area, the Midwest Independent System Operator – there are independent system operators all over the place, and they determine which power plants go online to serve your need minute-by-minute, hour-by-hour, day-by-day. They break it down. If I'm a wholesale producer, and I have power for sale that beats the price that Xcel Energy is putting in from its Sherco plant or from its Prairie Island plant, I get to play. Because we have a wholesale market that's run based on the price of the electricity at specific locations at specific times, day-by-day. It's called the locational marginal price.

That's the market. It's a mature market. It's a market mechanism that determines what is the price of power. And it turns out that you can compete on the wholesale market for somewhere between four and six cents per kilowatt-hour. Maybe even more.

Look at it this way. If you are a retail consumer, and you are paying ten cents per-kilowatt hour, why – about four cents of that is for the power plant. About three cents is for the transmission and about three cents is for the distribution. There is your ten cents.

If you are putting power into the high-voltage side of the substation that serves the distribution grid, you are avoiding – you are avoiding – the generation, four cents – you are avoiding the transmission – three cents – that's seven cents. That's the locational price of power delivered at that point in time, at that location.

Now it's a little less than that, because we add ancillary value with reliability and things like that, but the point is that we have a mature wholesale market that is paying in the neighborhood of four to six cents, while we have a requirement to purchase from PURPA that nobody can use, because the avoided cost is too low.

So what I am suggesting as a precondition – precondition – for this going forward, is that DOE gets together with the FERC and figures out the ratio. The ratio between the localized marginal price of power and what is the avoided cost at that location, at that point in time.

Now I have a friend who is a wind developer. And he did a 20 megawatt project. Or wanted to – by Watertown, South Dakota. The wholesale price – the LMP [local marginal pricing] price at that bar – was somewhere around four to six cents, so that's confidential information; but it's in the four to six range, but the purchasing utility for this 20 megawatt facility was – the utility was saying we're not willing to give you the PURPA – that two cents. So my friend took them to court. South Dakota court. And they said, how can it be that the utilities only offer us less than two cents for power under PURPA, while the wholesale price at this same location is six cents? I'm going to finish.

The court ruled with my developer friend. And the court said you – power company – you have to negotiate a power purchase agreement that has a relationship between the price you are paying for power from those 20 megawatts of wind generators and the price in your power purchase agreement. And they did. And you can go to Watertown now, and you can see those 20 megawatts spinning, because they got a price that enabled it to cash flow.

If DOE gets together with FERC and understands how to put this ratio together between the LMP at any point and location and time with a PURPA requirement to purchase, why now we have an economic driver that will phase out very rapidly this production of the waste that nobody wants to deal with. If DOE does that, we can get together and figure out how to do the best job we can to fairly compensate those that we decide are in the sacrifice zone. If we don't do that, you guys are going down. You're going to go down. Just say it. [Applause].

**Mr. Jim Hamilton.** Alright. Thank you very much. And our final speaker, Jan Boudart.

**Ms. Jan Boudart.** I'm Jan Boudart from the Nuclear Energy Information Service of Chicago.

This statement is based on my own ideas, supported by a conversation I had with Paul Gunter about three days ago.

Why are we having these meetings? And I am going to speak real fast, because this is going to take some time.

These meetings are being held in eight locations where no community or industry is being considered for harboring HLNW – high-level nuclear waste. One wonders what's the motivation of the federal government, through the DOE, for having them. But Secretary Moniz told us: Because we must continue our nuclear electricity program, we need a feasible plan for the waste. Secretary Moniz is looking for a community that will consent to have this waste in their backyard. Certainly, he got his answer at the Boise meeting. Idahoans do not want their state to become a dumping ground.

My state, Illinois, already has a great deal of HLNW, because we have more NPPs, nuclear power plants, than any other state. But people who understand the dangers of nuclear waste also say no, we don't want it.

So informed consent will necessarily be a problem if the plan to continue nuclear electricity is what's at stake. The position of NEIS is:

A. We need to close all NPPs and stop making it. There is no consent, and;

B. Moving the HLNW to consolidated interim storage, then planning to move it to permanent storage, makes for a mobile Chernobyl. So our rule would be to move it once, and only once.

But instead of not making any more waste, the DOE is funding research on a new generation of nuclear reactors, spending more money on advanced nuclear reactors than any category, except advanced vehicles. This is from the website http://energy.gov/lpo/portfolio-projects – I think that's lpo – but the problem is not the technology for the reactors. The problem is what can be done to keep us safe from the 72,000 tons of nuclear waste we already have?

By having these meetings on the pretense there will be a solution in our generation – in our generation, I mean ***us*** – to a 100,000-year problem, and funding a new generation of nuclear reactors, the DOE has its feet in two swamps.

The second part. Why were the global warming calculations so far off, and why are we warming so much faster than predicted?

Now I want to talk about an even greater sleight-of-hand being perpetrated by those who would continue on the path of nuclear power and who claim we must have it because it's a zero-$CO_2$ output.

In the first place, it doesn't have zero $CO_2$. For every kilowatt-hour created, NPPs put about 12% more heat directly into the atmosphere and water. That is heat that is not turned into mechanical power to turn the turbines that create electricity – instead of warming the air and water indirectly by producing $CO_2$ molecules that capture the sun's heat – the heat I'm talking about beams right out of the nuclear reactor and contributes directly to global warming by dumping heat straightaway into the environment.

Fossil fuel plants operate at about 40% efficiency. But nuclear plants operate at only about 33.5% – that is 67% of the decay heat from the splitting of the atom that goes right into the air and water. So in addition to the fact that the manufacturer of all electricity by nuclear plants is not at all free of $CO_2$, from the mining and processing of uranium, through the huge expensive construction project that is the NPP itself, to the constant tending that forestalls those expensive temporary shutdowns, there is $CO_2$ enough for everyone.

Dr. Goudreau has said that windmills, on the other hand, produce one-eighth to one-tenth of the amount of $CO_2$ in their manufacture. If you look at the amount produced per kilowatt-hour. And a windmill does not put unspeakably filthy radionuclides in the air just by being there and working.

So to sum up, these meetings are being held as a stepping stone to the continuation of nuclear reactors as a power source in the U.S. There is no consent. We desperately need to stop making nuclear waste, because we don't know what to do with it, and it lasts 100,000 years. Moving it around contaminates everything in its path and increases the possibility of accidents or attack.

In addition, putting dangerous radionuclides in our air and water, NPPs are not carbon-free, and NPPs dump enough heat into the environment to melt one-fourth of the Earth's ice. This according to calculations by Susan Shapiro and her colleague whose name I've been trying to think of for three days, and can't. So Susan Shapiro is the person that I got the information about nuclear plants producing one fourth of the heat directly into the atmosphere needed to melt all the ice on Earth.

So I really appreciate your listening to me and I went as fast as I could.

**Mr. Jim Hamilton.** Thank you very much, Ms. Boudart. And thank you again.

And now to wrap things up, I'm going to turn it over to Mr. Andrew Griffith, who is the Associate Deputy Assistant Secretary for Fuel Cycle Technologies, to offer his closing remarks. Andy?

**Mr. Andrew Griffith.** Thank you, Jim. And on the behalf of Secretary Moniz, John Kotek, and the entire Consent-Based Siting Team, I want to thank you all for coming out here today.

This is the eighth of eight meetings around the country and I just have to tell you that we've gotten invaluable feedback; input, and we could not have done it without your presence here today to give us your unvarnished, raw input, because it's very valuable to us, if we're going to build a durable solution.

And I would like to recognize my teammates – if everybody from the Consent-Based Siting Team could please stand up, I want to personally recognize you and thank you for all the tireless days and nights; travel miles; time you spent away from your families [Applause]; I just want to share with the folks that have shown up here tonight that these folks have worked tirelessly on this effort, and while some of you believe this is an impossible achievement to realize, we are hopeful – we're optimists, obviously – but this is really important. This is a tough challenge.

And so I am going to talk about three things this evening to wrap us up. I'm going to talk a little bit about the challenge, and I thought Commissioner Tuma put it in an excellent perspective. I want to talk about kind of a summation of what we've heard, not only tonight, but from across the country in the eight meetings. And then I'm going to talk a little bit about where we go from here, because the next steps are extremely important.

So the challenge. As Commissioner Tuma mentioned, no matter how you believe or what you believe about the future or the importance of stopping all nuclear energy in the country, this challenge remains. This challenge remains. There is a lot of spent nuclear fuel; high-level waste that resides in our country. It has accumulated at our DOE sites; it has accumulated at our commercial reactors, and it has to be dealt with. It has to be dealt with because there are future generations that are counting on us to deal with it. And we believe that kicking it down the road is not a solution. We believe that all roads – as John Kotek pointed out – all roads lead to a repository. It has to be isolated from the biosphere for a long, long time. And it's for the future generations that we are trying to develop the path to get there.

So, what have we heard? What did we hear tonight? Well, obviously, DOE has a trust issue. That's no surprise to anyone. However, we are working to fix that. We have to fix that. All solutions in the future rely on us fixing that.

The communities have to be treated as equal partners as we go forward. We could not agree with you more. We believe that the ultimate solutions on dealing with this waste, on the spent nuclear fuel, have to originate with communities that are willing to have a conversation with us. And hopefully through the process that we're able to develop, we'll be able to develop that trust – that relationship; that partnership. And it has to be a durable partnership. Not just a partnership with one or two leading officials from that community, but foundational. And I'll talk a little bit more about that in a minute.

So, where do we go from here?

Well, we have our hands full. It's not an easy path. It's not simply just follow the rules that have been established, and we'll go happily and we'll solve it. We pointed out that the top-down approach hasn't worked. Yucca Mountain is not a solution. We're trying to develop something that's bottoms-up; that communities are allowed to step forward, and that we will engage with them on an equal footing and hopefully establish that partnership.

I really liked the term that Kathryn Shaver shared with us referring to not just being connected with the city leaders or the community leaders, but having it founded in the grassroots of the community. I really like that. And I think how we test that – how we satisfy ourselves that we are engaging with the grassroots of the community – is going to be really important on how successful we can carry this forward – how successful we can be.

So, where do we go from here? How do we achieve that?

Well, John talked about the funding opportunity announcement. The ability for us to fund grants with communities that are willing to have a conversation with us, with no commitment; just so that they can learn more. Well, the future is highly uncertain on that because the House and the Senate, as he pointed out, disagree on the approach for next year. That has to get reconciled. Hopefully, we will be given some resources that enable us to engage with communities, where we can give them resources so that they can hire independent experts to inform them. They can hold their own meetings – we don't have to be there – they can research their own information. They can travel to other locations where waste is being stored. They can visit the Prairie Island tribe and asked them, "Well, what are you concerned about?" Because clearly they are going to have to be concerned about the same things. They can define the benefits that would satisfy them. But we have to assure them that this can be done in a way that protects them and the environment. We believe that the technology exists to do that. Clearly, what we believe doesn't matter. What they believe matters more. And so we have to have these conversations and we need to give them the resources to enable us to have that.

While this is the eighth meeting this year, I think that we got an excellent perspective nationally on how we can develop a consent-based siting process that can be durable. [Objections about Texas and New Mexico being omitted shouted from floor]. Please let me finish. I was very respectful for you when you spoke. Please show the same respect for me.

Our next discussions that we would like to have would be for communities that are interested in talking to us. How those communities step forward to have those conversations is going to be a key part of how we carry this conversation forward. How those communities define what does consent mean. That's going to play a heavy role in what the solution can be, I think.

And so we want to carry this conversation forward. We are going to produce a draft report in September that reflects the inputs we've received. We'll use the feedback we get on that to develop the steps next year on how we engage with communities and hopefully take this conversation further and clearly the future is uncertain. Clearly there's events in November that will weigh heavily into what the next Administration wants to do with this Program, but we believe that the information we've collected this year; the ideas that we are forming, can present a solution for the future.

And so I'm optimistic. I'm confident that we are going to be making progress next year, and I just want to again thank all of you for being here tonight and showing us what's important to you. And please continue to keep the thoughts coming. This conversation doesn't end here. This has to be a phased and adaptive approach. We're trying to develop a process that is resilient. We know that things are going to come up; we know that there will be challenges along the way, but a process that is durable – that is phased and adaptive – we believe has the best chance of success going forward.

So again, thank you all – and safe travels home. Good night. [Applause].

**Mr. Jim Hamilton.** Thank you Mr. Griffith. Thank you panel members. Thank you audience here in Minneapolis and on the webinar. Thank you logistics team and facilitators. Don't forget to pass in your meeting evaluation forms. We read them and learn from them.

This wraps up the formal part of the meeting. The webinar will now close. The informational poster session is going to be staffed for a half hour from now on.

And that's it. Thank you very much. We are adjourned. Safe travels. Have a good evening. [Applause].