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PROPOSED CLEANUP ACTIONS FOR REMEDIATION OF
HANFORD WASTE SITES
CONTAMINATED WITH PLUTONIUM AND CESIUM



VOLUME II
MEETING
Thursday, July 21, 2011
Seattle, Washington

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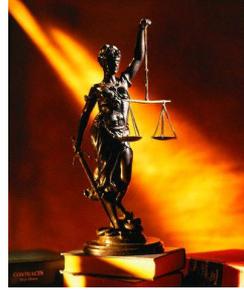
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VOLUME II

MEETING

Thursday, July 21, 2011

Seattle, Washington

BE IT REMEMBERED THAT, pursuant to the Washington Rules of Civil Procedure, the Public Hearing was taken before EVA P. JANKOVITS, a Certified Court Reporter, #1915, on July 21, 2011, commencing at the hour of 6:59 p.m., the proceedings being reported at 305 Harrison Street, Olympic Room, Seattle, Washington.

1 VOLUME II

2 MEETING

3 Thursday, July 21, 2011

4 6:59 P.M.

5
6 MR. MARTIN: Thank you, guys, for choosing
7 plutonium and cesium waste over the Storm game. We're
8 really glad you guys are all here.

9 My name is Todd Martin and I'll be facilitating
10 tonight. And my job is to make sure you all guys all get an
11 opportunity to get your questions asked and answered and get
12 your comments on this document into the record.

13 So as a formal CERCLA meeting, we are actually --
14 have a court reporter tonight. So when we get to the
15 question and answer and comment period, we're going to try
16 to make sure you guys have a mic. If you're not comfortable
17 coming up here, Sonya will chase you down to be sure that
18 our court reporter can actually hear and get the story
19 straight in the transcript.

20 So we've got the agenda up here. Super
21 complicated. Welcome, that's where we are now. And then
22 we're going to -- and I'm doing the overview, which is now.
23 We're going to hear a -- actually, the overview is going to
24 be from the Department of Energy. J.D. Dowell from the
25 Department of Energy and Emmie Laija from EPA will be doing

1 the overview. We've also got John Prine from the Washington
2 State Department of Ecology. John Prine, did I say that?

3 **UNIDENTIFIED SPEAKER:** You did.

4 **MR. MARTIN:** I wish we had John Prine.

5 **MR. DOWELL:** So do I.

6 **MR. MARTIN:** John Price is here, so if you have
7 any state questions, you can ask them of him. And then
8 we'll be hearing from Gerry Pollet of Heart of American
9 Northwest and the local perspective. And then we'll go into
10 question and answer and finally public comment. And I'll
11 say a little bit more about that when we get there.

12 Questions? Concerns? Are we ready to roll? Okay.

13 J.D.

14 **MR. DOWELL:** Hot. Am I hot? Okay. Can you all
15 hear me? Is this okay?

16 Welcome, everybody. And, again, thank you for
17 coming out tonight. I know it's on your own time. And we
18 are truly here to listen to what you have to say. And I
19 appreciate the opportunity to have the exposure here in
20 Seattle, as we will have in Hood River and Portland next
21 week. And, again, we really appreciate you coming out.

22 Before I get started in an overview, and I'll try
23 and keep that fairly brief on the overview of the full site
24 and get into the decisions that we're proposing tonight, I
25 want to introduce the people that are here from the

1 Department of Energy and our contractor groups, so if you do
2 have questions afterwards, you can come and ask them the
3 technical questions necessary.

4 On my right here is Briant Charboneau. He's the
5 federal project director. On his right is Moses Jaraysi. On
6 his right is Virginia Rohay. I've got Paula Call in the
7 back. And Paula's got a team with her, Sonya Johnson and
8 Lynn Tegeler. If you guys could raise your hands.

9 I'd like to thank them from the start right now.
10 They're part of the public meeting and public involvement
11 group that we use at Department of Energy and with our
12 contractor groups. And they do a lot of work to make this
13 happen and facilitate this. And it's a lot of work, and I
14 really appreciate you guys doing that for us.

15 Before we get started, I want to point out a
16 couple things that you're going to see more often at our
17 public outreach, whether it's about meetings like this,
18 state of the sites, town meetings, wherever we see the
19 public, we're going to start -- you're going to start seeing
20 the progress that we're making out at Hanford visually. I
21 know a lot of people, especially from the west side, don't
22 have the opportunity to go over there. When I lived over
23 here, I never went over to Hanford, just kind of knew it as
24 this big, amorphous government place that had a fence
25 around. And finally getting to understand it, I think a

1 picture's worth a thousand words.

2 So you're going to see that as we come out to the
3 public, and I hope you take a look at that and question it.
4 If you don't understand what you're seeing, ask what it is,
5 ask what the background was, you know, really ask us and
6 have us dig deep and answer your questions because that's
7 what we're here for. We serve you, as the public, and I
8 take that very seriously.

9 Let's see. I'm doing this. Sorry about that.

10 So our agenda tonight, and, again, reiterate the
11 purpose, we're really here to provide you with the
12 information and receive your input on these decisions on
13 Areas 200-CW-5, 200-PW-1, 3, and 6. We'll get into the
14 details of those later on in the -- in the brief here
15 tonight.

16 But before we do that, I'm going to go over our
17 Hanford cleanup approach. I'm going to kind of drill that
18 down. So I'll start generically at a large, kind of high
19 level and then get down to the areas that we're talking
20 about tonight. And I'll turn it over to Emmie to give us
21 some -- some background on these cleanup remediation sites
22 that we're going to talk about tonight.

23 And then lastly, as I go through the background,
24 the remedial alternatives and preferred alternatives for
25 these sites, we'll have -- we'll finish with how you can

1 provide us more input and more information, including this
2 site, this -- this meeting tonight.

3 Before we get too far, I do want to do an
4 advertisement. If you ever get a chance -- and this is
5 available by DVD that we have tonight. I don't like to
6 print out copies because we're trying to not print out a lot
7 of color copies of stuff, but we do have DVDs that you can
8 take with you tonight on the Hanford site cleanup completion
9 framework. This is a strategic document that basically
10 gives you insight on how we look at the site itself. You
11 can understand the priorities by which we make our work
12 happen, by which we look at remediation, and by looking at
13 how we executed the resources, that is, budget and resources
14 of our contractors' people to make this happen on a daily
15 basis.

16 You'll also get out of that document the goals for
17 our cleanup, the challenges that we see, and the
18 relationships that we have between the River Corridor, the
19 Central Plateau, and the tank waste. And those are three
20 distinct different groupings of waste that we deal with.

21 So before we get too far, I want to talk about the
22 overview of Hanford. You see this -- this footprint. It's
23 586 square miles. You can see the Columbia River as it goes
24 through. And you'll see it broken down into four areas. The
25 first area is the green area. It's the Hanford Reach

1 National Monument. It's about 290 square miles. Not much
2 radioactivity, not much contamination.

3 Is it too loud? Here, I'll put it down.

4 **THE COURT REPORTER:** I need you to slow down a
5 little bit, please.

6 **MR. DOWELL:** Okay. Slow down.

7 **THE COURT REPORTER:** Thank you.

8 **MR. DOWELL:** Okay. I'm going to slow down a
9 little bit too. Is this too loud for people? All right.

10 So the first area is the Hanford Reach National
11 Monument, not a highly contaminated area, but an area that
12 we -- we're going to be closing and finishing this year. So,
13 again, we're trying to shrink this footprint down.

14 The next area is the River Corridor. It's 220
15 square miles displayed here in yellow. And that's the area
16 that's adjacent to the river. As -- as you discussed
17 earlier in your workshop, it holds the nine reactors that
18 are along the river. And it also has the 100 area where
19 they process uranium before radiating in the reactors.

20 And then in the dark brown area and the dark red
21 areas inside of it is the Central Plateau. And that's
22 really the heart of Hanford. It's 75 squares miles. And
23 that Inner Area, that red area, is called the Inner Area, is
24 10 squares miles.

25 The basic premise of this is basically if you

1 think of -- if you think of our mission, our mission is
2 primarily to protect the Columbia River. That's why I
3 joined the Department of Energy about three years ago. That
4 mission, if you think about the contaminated sites and what
5 we're trying to achieve, we're trying to achieve closure on
6 the River Corridor by 2015. And so we're trying to mitigate
7 as many of the sites and areas that are close to the river
8 as possible as we move ourselves into that Inner Area of
9 contamination on the Central Plateau. So it makes a little
10 bit of sense, as we go through that, how we're trying to
11 achieve remediation in stages and priorities that will
12 protect that river as best possible.

13 Now, that said, the same time we're doing that,
14 we've got groundwater. And groundwater I'll talk to in the
15 next slide, but it's an important facet of this. And when
16 you look at the Central Plateau and the River Corridor,
17 actually, in the Central Plateau, there's three facets of
18 our strategy there that break out the general kind of idea
19 of how we're remediating this waste.

20 You've got the outer area, which we're trying to
21 clean up to the same standard as the River Corridor, which
22 is drinking water standard. If we can't get drinking water
23 standard in the Central Plateau outer area, we're going to
24 stop any plumes from reaching the river at all costs. That
25 is our primary mission of groundwater remediation and

1 remediation in the Central Plateau.

2 When you look at groundwater right now, we're
3 about to commission -- in fact, Briant is the project
4 director for one of the largest groundwater pump and treat
5 plants in the world. And that plant will process 2,500
6 gallons per minute when it's complete. It's a very
7 impressive plant. If you ever get a chance, and I think
8 we've got pictures of it, it's really impressive to see it.
9 And we're going to commission it this year, and it'll start
10 processing waste sometime in March. That's when we expect
11 it to actually start processing water.

12 So that's pretty much the Central Plateau cleanup
13 approach.

14 As you look at the Inner Area, this is a very
15 interesting slide because it shows you a couple things. It
16 shows you that we're serious about keeping that Inner Area
17 to as small as possible. And the Inner Area is different
18 than other areas of the Central Plateau. It's different
19 than any other area at the Hanford site. Hanford site is
20 586 square miles. This Inner Area is 10 square miles. It's
21 the minimal -- it's what we've designed to be the most
22 minimal footprint we can design and get all of the materials
23 that we have to store, stored long term, with DOE presence,
24 long term, controlling access to that site and remediating
25 the waste inside this area.

1 And as you can see by looking at the chronology,
2 basically, if you will, this is basically a -- defines the
3 boundaries of the Inner Area. You can see that in 1965,
4 Washington State Department of Ecology defined a low-level
5 radioactive waste disposal. We had a Naval reactor
6 compartment disposal defined in 1986. We got through
7 several of these decisions and recommendations that you can
8 see, as the numbers progress, that go into our U Plant
9 record of decision, integrated disposal facility waste
10 disposal. You now, all these things have acronyms. These
11 are all basically waste sites.

12 A U Plant was the canyon that they used for
13 refining and getting to the final purity on plutonium. And -
14 - and the integrated disposal facility is a giant waste
15 facility. These are all sites where there's going to be
16 material held long term -- long term. The material that's
17 going to be held there is going to be low-level radioactive
18 waste. It's not going to the true waste that we talk about,
19 that gets shipped to WIPP. That actually gets shipped to
20 the waste isolation pilot plant down in New Mexico.

21 So when you think of the waste streams coming out
22 of Hanford that's low-level waste that we are probably --
23 that we are likely keeping most of in Washington and true
24 waste which gets shipped down to waste, which is transuranic
25 waste. It's the more -- it's the nastier stuff that we talk

1 about.

2 So if you look at how that footprint is designed,
3 it's not a real attractive shape. It's not a beautiful
4 football field. It's not a square. There's not a lot of
5 inefficiency in that design, and that's why it's designed
6 that way, because it's defined by the areas that we are
7 going to maintain long term as the Department of Energy,
8 with our, presence monitoring those waste sites until we
9 assure that public safety and human health and the
10 environment are protected.

11 As we look at Hanford's cleanup footprint as I
12 talk about the Inner Area, it's an area that we're going to
13 -- we see it differently. It's not going to be -- have a
14 free use of land. It's not going to have a land use that's
15 similar to the areas outside in the River Corridor where
16 other -- other agencies might be able to control that land.
17 It's going to be under DOE control.

18 As we look at the decisions that we make there,
19 we're going to make strict, risk-based decisions there.
20 Those are decisions that are designed to protect the public,
21 to protect human health and the environment, and -- and,
22 again, we'll have a long-term presence in these areas.

23 We're going to leverage -- or, actually, as we
24 look at those and we come to these decisions and we make
25 these final record of decisions, enter them and start our

1 remediation, it's important that we continue to make
2 progress. As we see, our -- our budgets get more and more
3 challenging, our resources get more and more challenging.
4 You all know what's going on with the federal government
5 right now. It's not a scapegoat. I'm telling you right now
6 I will never use that as a scapegoat personally, as a
7 manager for the Department of Energy, and I think it's
8 important that you understand that we don't make decisions
9 on budget alone. When we look at budget and we look at
10 decisions, it falls underneath the CERCLA evaluation
11 criteria that we use after we've met threshold that the
12 decision is a viable decision to make and it's a remediation
13 strategy that it meets the threshold for actually being
14 under consideration.

15 We look at balancing criteria. And you probably
16 can't see these, it's an eye chart, but to understand this,
17 it's really simple, and you come up and see it after this
18 brief and after the Q&A period. They look at long-term
19 effectiveness and permanence of the decision. They look at
20 the reduction of the toxicity, the mobility and the volume
21 of that treatment. They look at the implementability. They
22 look at whether or not we can actually do it or not. We
23 look at cost and we look at the short-term effectiveness to
24 see -- and balance all these decisions to see if we can make
25 the right decision with the right priority with the

1 resources that we have.

2 This is a challenging year for us. For example,
3 right now, I'm one of two assistant managers. There's a
4 manager for the River Corridor, manager for Central Plateau.
5 I'm at the point where, you know, it used to be pretty good.
6 We -- we had -- we could make decisions and be flexible with
7 millions or tens of millions of dollars. I'm down to
8 decisions in the ten thousand and thousand dollar range.
9 We're counting pennies. I'm not hiring people. I'm
10 doubling up on people. I'm not going to hire an admin
11 assistant, for instance, because we're trying to be as
12 thrifty as we can to get the money put on cleanup because we
13 know it's a precious resource. It's not that we squandered
14 it before, but we had a lot more flexibility in research and
15 development and doing other things that they were beneficial
16 but maybe not paid out in the long term and to remedy
17 efficiencies. We're at the point now where our future
18 budgets are going to make us be lean and mean, and that's
19 the way we have to play.

20 The other thing to look at, as we make these
21 decisions, the CERCLA evaluation criteria, while we're the
22 long-term sponsor -- or long-term champion of the site,
23 we're there watching it, you know, custodian of it. We have
24 to do a five-year effectiveness review on all these
25 decisions that we make.

1 So as we look and we look at the remediation, we
2 look at data coming out of the wells, the monitoring wells
3 and the different samples that we take on a annual basis, we
4 look at the effectiveness of the remediation strategies as
5 they go to final decision, we'll actually make an evaluation
6 of their effectiveness. And if that effectiveness breaks
7 down for any reason, we make -- we have to go back in and
8 fix it by law. That's what the CERCLA law does for us.
9 Doesn't happen very often because usually these decisions
10 were our made properly. But I think it's an advantage
11 because being there long-term, who knows what the -- what
12 types of remedies we'll be able to leverage a hundred years
13 from now when my son's son is working at Hanford, trying --
14 you know, watch -- being a guardian of this kind of activity
15 and remediation decisions that we're making today. So it's
16 food for thought.

17 I'm going to leave on this slide and then Emmie's
18 going to come up and talk about the background of the actual
19 site we're talking about. But this is the CERCLA process.
20 And as you go through the CERCLA process, it starts with a
21 site inspection. We get sample data so -- but it's not just
22 sample data. In fact, a lot of the information that we know
23 about Hanford is process data.

24 It's records and history of what went into what
25 tank of what -- what facility processed what and what ditch

1 was used for what. And that's where we get a lot of the
2 quantities that we know. That's where we get a lot of the
3 characteristics of the plumes and the cleanup, extent of
4 condition that we have to take care of, and then we try and
5 validate that as efficiently as possible with our sampling.
6 However, we wouldn't be here unless we felt we had enough
7 information to make a final decision. So it's not that we
8 don't have enough information. It's that we characterize
9 that information and make the right decision to protect
10 human health and the environment for as long as -- for
11 forever.

12 So looking at the site inspection, we get all that
13 evaluation. We go into remedial investigation. That's
14 where we collect all this data. We kind of analyze what the
15 extent of condition is on each of these sites, and then we
16 go into a feasibility study which evaluates the risks and
17 starts to develop the proposals before we get to final
18 proposal.

19 For the PW-1, 3, and 6, CW-5 site, we actually
20 brought this to the public two years ago, 2008 and '9, and
21 received your input. We actually made changes in the
22 strategies that we're talking about tonight when you see the
23 preferred alternatives with that public input, so if you
24 don't think it matters, it does, and we listen to it. And
25 so it's important that you keep coming to these things and

1 keep giving us your input because we're listening.

2 So at this point, we're now at the proposed plan.

3 And you'll see it right here. We've gone through the
4 different options of treatment viabilities and treatment
5 options, and we're now at the process where we've determined
6 the preferred alternative with our partner, the APA in this
7 decision, before we go back to the tri-party agreement and
8 review all the public comments that we get and come out with
9 the record of decision. So the next stage after this is
10 that after we finish our public comments, we'll go in with
11 the two other parties in the tri-party agreement to make a
12 record of decision.

13 Once we have the record of decision, it addresses
14 public comments. We'll get into the remedial action which -
15 - where we'll go through the design and the implementation
16 of the remedial action. And then once that's complete, it
17 gets into the five-year review cycle for reevaluation to
18 evaluate the effectiveness and efficiency.

19 So on that note, we're going to get into the
20 actual area analysis, and Emmie's going to give you a
21 background on that.

22 **MS. LAIJA:** Can you hear me all right? Yes? Okay.

23 Hi, everyone. My name is Emmie Laija. I work for
24 the Environmental Protection Agency. I'm the project
25 manager for the 200-PW-1, 3, and 6 waste sites. And I just

1 wanted to take a few minutes to talk about how these waste
2 sites became contaminated.

3 So J.D. was talking to you about how the Hanford
4 site is split up. We have the River Corridor and then the
5 Central Plateau and the Inner Area. The Inner Area is
6 actually divided in half. We refer to it as the 200 West
7 area, which is on that dark red area on the left-hand side,
8 and then the 200 East. The waste sites that we're talking
9 about tonight that are located in the 200 West area have
10 primarily plutonium contamination. And then those in 200
11 East are different because they have cesium contamination
12 there. So we'll start breaking it down into more detail.

13 When we're looking at the Inner Area or the
14 Central Plateau, the Hanford site, keep in mind that there's
15 over 800 waste sites and facilities located here. There is
16 -- Hanford is very large and very complex. So in order to
17 make it more manageable, we have to break it down into
18 smaller units so we can plan cleanup appropriately. Kind of
19 how the old saying goes, How do you eat an elephant? Well,
20 you eat it one bite at a time. So that's what we're trying
21 to do here.

22 We're looking at these 21 waste sites. As I
23 mentioned before, the ones in 200 West on the left side of
24 the screen primarily have the plutonium contamination. So -
25 -

1 Sorry. I lost my train of thought for a second.

2 Just give me a minute.

3 Okay. So J.D. actually stole a bit of my thunder.

4 There were a few points I wanted to make here. One of those
5 was being that we're looking at sites that are for the soil
6 that's contaminated. Of course we have groundwater
7 contamination at Hanford also. As J.D. mentioned, we have a
8 large system being put into place to address that. So we're
9 just looking at the soil contamination in these waste sites.
10 And let's look at how the contamination got there.

11 This graphic here is depicting the activity that
12 happened that led to these waste sites being created. In
13 the Central Plateau, we had large facilities that processed
14 plutonium. So from those plutonium production activities,
15 we had large amounts of liquid waste that were discharged to
16 the soil. And those waste streams are different depending
17 on the activities that were occurring. So depend- -- those
18 characteristics of the waste streams actually identified how
19 we broke up the sites into waste groups. If you looked at
20 the proposed plan or the fact sheet, we refer to these waste
21 sites being in the Z-Ditches or the high-salt or the low-
22 salt sites or in the cesium-137 sites.

23 So for the Z-Ditches and low-salt sites, that
24 liquid waste contains primarily plutonium and americium.
25 That waste, it stayed for the most part near where the --

1 near where it was discharged. It didn't travel too far down
2 into the soil.

3 In the high-salt waste group, there's three waste
4 sites in there. That waste was actually highly acidic, and
5 that allowed it to travel further down through the soil
6 column and actually reach groundwater. So at one point in
7 time, that contamination was a source for groundwater
8 contamination. So it travelled very deep. The high-salt
9 sites are a big player in this cleanup decision that we're
10 discussing tonight.

11 And then we had the cesium sites that were in the
12 200 East area. There the waste does not -- does not --
13 excuse me -- the liquid waste didn't travel as deep. For
14 the most part they stayed near the point of discharge, maybe
15 going 30 -- 28 to 30 feet or so below ground surface.

16 So to give you -- I guess to compare it to
17 something more familiar, I would compare these waste sites,
18 the trenches, the cribs, the ditches, to something like a
19 septic system where -- an old-fashioned septic system. So
20 you flush the toilet; the solids are removed. We have two
21 waste sites that are tanks that collect -- collected
22 solids. Those primarily have plutonium and americium, so
23 that's separated. And then the liquid waste is discharged
24 to the soil over a bed of gravel or something similar to
25 distribute the water so it runs over a larger surface, and

1 then that allowed to it travel downward.

2 And that's -- that's just a quick -- these waste
3 sites are actually very complex. This is just a quick
4 summary but hopefully it gives you a better idea of the type
5 of contamination that we're dealing with.

6 And I'll turn it back to J.D. so he can discuss
7 our preferred alternatives.

8 **MR. DOWELL:** Thanks, Emmie. Yeah.

9 So when we look at the waste sites, I think if you
10 had a chance to look at our placards or if you get a chance
11 to look at them after, you'll understand. And as Emmie
12 said, they're very complex, but at the same time, many of
13 them are very rudimentary. You can see from the dates that
14 they were -- they were used started in '45 after the
15 plutonium was being fabricated in earnest, went through mid
16 '80s, late '80s, and some of them can be, like these, plain
17 ditches where they just dug a ditch in the ground of -- of
18 brown and dumped water in it to elaborate French drain
19 systems where they actually, you know, engineered an actual
20 slope to the side, put gravel in the bottom about two meters
21 underneath it, and then put a pipe through that with
22 perforations, French drain is what that's called, so it
23 efficiently distributed the water along that whole ditch.

24 But you'll find that, when you look in the RIFS
25 documents, you'll see that there's a number of different

1 geometries. It's kind of interesting to see how they
2 developed, but they're very rudimentary. And they were very
3 effective. They got the stuff into the ground effectively.
4 That's the problem.

5 So in characterizing 200-CW-5 Operable Unit, you
6 can see it's made up of five different types of things.
7 There's three open Z-Ditches, and they're called Z because
8 of the configuration they made across the actual site
9 itself. And then there's a tile field which is kind of like
10 a ditch with a tile lining that's buried, and then one
11 unplanned release site. And that, to explain it quickly,
12 it's -- basically they were digging another Z-Ditch, found
13 out they were too near the contamination of another site and
14 had to move it, but used that to dump material anyway at the
15 same time, so nothing mysterious there.

16 This received the cooling water and steam
17 condensate from the plutonium finishing plant that was part
18 of the processing. So you say to yourself, Well, steam
19 condensate is just creating a single loop and it's
20 protected, but these actually occurred when pinhole leaks
21 would develop inside that system and leaked some of the
22 plutonium out. And those were either not fixed, not caught
23 in time, and related and -- and ended up with this site of
24 contamination as it was flooded into these -- into these
25 various tributaries of the ditches.

1 The contamination located primarily at and below
2 the bottom of the ditches, most of this contamination is
3 within 15 feet of BGS, the topsoil, the top layer of ground
4 soil, so they're shallow, if you will, relative to -- to
5 where they are in the soil spectrum.

6 The primary risk drivers, as you can see here, are
7 americium-241, plutonium-239/240, cesium, and, actually,
8 radium as well.

9 So when we look at the alternatives, some of these
10 are required by the CERCLA process each time you do one. For
11 instance, the first one there is no action. Don't do
12 anything. You're always required to do that as a
13 comparator. So these are the different things that we did
14 and we looked at, and no action was the first one.

15 Maintaining the existing soil cover and
16 institutional control is another one. And that's the
17 existing soil cover. That's not a cap or an engineered soil
18 cover, and then putting institutional control so that nobody
19 can get into it. So that's another option we looked at.

20 Remove, treat, and dispose is another option. It's
21 self-explanatory.

22 And then engineered surface barriers are actually
23 barriers like evapotranspiration barriers which are designed
24 to put plants and other material that will evaporate the
25 water and then put a layer of some kind of nonpermeable

1 membrane underneath several soil layers and then, underneath
2 that, sand and other soil configurations so that water can't
3 get to the bad stuff to drive it further into the ground. To
4 get to the stuff into the ground, you have to have a driving
5 force, and water is typically that driving force.

6 We'll talk a little bit about that as Emmie talked
7 about the difference between high and low salt is a good
8 setup for when we get into PW-1. But for this area, an
9 engineered surface barrier would be something that doesn't
10 allow the rain to penetrate the ground and drive that
11 material deeper.

12 In-situ vitrification. Vitrification means to
13 glassify, to turn into glass. And in-situ vitrification,
14 they take large electrodes on a diagonal pattern across from
15 each other, set a voltage through those and it actually
16 melts the material in between. It melts the soil so that if
17 you have a glassification that holds the material in place
18 and is designed to keep it there. And then there's a
19 combination of alternatives.

20 For this case we chose to remove, treat, and
21 dispose. So it means that we'll be removing all the
22 contaminated soil present that maintains a risk to human
23 health and the environment. That's, like I said, about 15
24 feet. We'll treat it. And then we'll dispose as we
25 require. Goes either ERDF or to the WIPP site if it meets

1 the true requirement for shipping to WIPP.

2 As we look at 200-PW-1, 3, and 6, basically 16
3 underground engineered liquid waste disposal sites, same
4 kind of thing but the difference on this one, this is
5 important, is that we're going to organize the preferred
6 alternatives into these -- these types of alternatives: High-
7 salt, low-salt, settling tank, cesium-137, and other sites.
8 That's a potpourri of different kinds of things. We're
9 mixing -- we're mixing elements like cesium-137 with the
10 configuration or the element status, like high and low salt.
11 And then we're also mixing in a geometry of how it was done
12 on settling tanks. So bear with me. It'll -- it'll make
13 sense. And of course you can -- we can amplify it in the
14 question and answer period.

15 These were all during Hanford-site operations,
16 typically coming from Z plant, which is the old PFP,
17 plutonium -- plutonium finishing plant, the new plutonium
18 finishing plant. And then for cesium-137, which is the one
19 -- the kind of the orphan on the eastern side, that came
20 from the Purex plant. So the primary risk drivers here that
21 we identified are plutonium, americium, and carbon
22 tetrachloride.

23 One thing about carbon tetrachloride that we have
24 in place that I'll talk a little about later is the system
25 that we use for -- for mitigating it. It's the -- I want to

1 get the acronym right, so I'm looking -- it's the soil vapor
2 extraction system. And that sounds pretty fancy and
3 everything like that. It's really, basically, just a vacuum
4 on the surface that pulls carbon tetrachloride out as a
5 vapor, which is very effective, and transfers that vapor
6 back into a solid form. Today we've pulled out almost 170 -
7 - or over 175,000 pounds of carbon tetrachloride from the
8 ground in these areas of PW-1, 3, and 6. So it's an
9 effective measure that has proven itself, and we continue to
10 use it to this day.

11 I think we started that 1980 -- 1991? 1991.

12 So that's that third site that we talked about
13 with PW-1, 3 -- PW-3 with cesium-137. That's the last
14 bullet.

15 So looking at the alternatives that we evaluated,
16 again, there's only two differences between this and the
17 previous slide I talked about with CW-5. And the first one
18 -- you know, I was doing this before, but I've got this
19 little pointer thing. Okay, there it is -- is maintain or
20 enhance existing soil cover. And then the other one is soil
21 vapor extraction. Those are the only two differences. And
22 then we don't have a combined alternative on this one as
23 well. And you can see the rest of this. I don't want to
24 talk through it again. I'd bore you.

25 So for the preferred alternatives for high salts,

1 Emmie illuminated the difference between high and low salt.
2 It's an important difference. We found that the low salts
3 really didn't penetrate the ground very deeply, the high
4 salts did. The mechanisms by which those -- that plutonium
5 moved is still under study today, but we have a fairly
6 thorough and good understanding, we think, of how that
7 happened.

8 Number one, it has to happen in acidic conditions.
9 Number two is highly linked with the ability of carbon
10 tetrachloride to also penetrate through that soil column and
11 pool down in the caliche layer where it sits today right
12 now. And if you look back there on the -- on -- and you get
13 a chance to look at the placard, you can see those purple
14 areas are where we have modelled and where we have sampled,
15 in some cases, to verify where that material sits. And
16 those are -- those actually depict graphically what we're
17 talking about tonight.

18 So in our case, we did a combination of
19 alternatives. It made complete sense to continue to operate
20 the soil vapor extraction system and continue to vacuum,
21 basically pull that carbon tetrachloride out of the ground.
22 It's cost effective. It's very effective. It's a no-
23 brainer.

24 We evacuate the highest concentration of
25 contaminated soils and dispose of as required, and we're

1 going to two feet. That's the depth -- that's the extent of
2 recovery that we're going to make on this area after we
3 remove the structure. So once we take the structures out of
4 place for these high salt burial grounds, we're going to
5 actually take two feet of material out and process that in
6 the appropriate burial facility, either ERDF or WIPP. And
7 then we're going to backfill the evacuated area with clean
8 fill.

9 I want to make this clear because I've seen some
10 things that say we're going to dilute the material. We're
11 going to dilute plutonium to get it into ERDF, and that
12 doesn't make a lot of sense to me. We'd never mix clean
13 soil in with plutonium to try and down- -- downblend it.
14 That's -- we don't do that, so... We do have clean soil
15 available because after we excavate, we backfill with clean
16 soil. So I hope there's no misunderstanding on that.

17 And then lastly, we're going to construct an
18 evapotranspiration barrier on top of it. Like I said,
19 that's designed to prevent water from driving the material
20 any deeper than it is already.

21 For the low-salt group, also, these are found in
22 PW-1 and PW-6 areas, going to remove a significant portion
23 of the plutonium contamination, dispose as required, it's
24 basically RTD, and apply the evapotranspiration barrier
25 there as well. This will recover most of the material.

1 For 200-PW-3, which is the cesium group on the
2 eastern side, the plan is for to us enhance the existing
3 soil cover or maintain the existing soil cover, so we
4 provide a 15-foot barrier over that material in perpetuity
5 as long as we're controlling the site.

6 For the 200-PW-1 and 200-PW-6, which is kind of
7 the mixed group or the settling tank waste group, the plan
8 right now is to remove the sludge and liquid containing the
9 plutonium and americium, that's RTD basically what we're
10 treating. We're going to have to treat this material so
11 that it's in a configuration that we can process and
12 actually bury or send to WIPP. And then we're going to
13 dispose of it to the appropriate site as required.

14 After we're done with that, the tank's empty,
15 we're going to grout it, which means cement, is grout,
16 basically, grout it in place.

17 And, lastly, on 200-PW-6, other site waste groups,
18 no action on the French drain system in Z-8 or the
19 injection/reverse well system in Z-10 because we can't find
20 the soil contaminations required or necessary for us to have
21 to provide any protection. They're just not there. These
22 sites were designed to get that material down deep. We have
23 not been able to find it with our sampling. So that kind of
24 -- that's -- that's where that stands. So it doesn't --
25 there's no -- there's no reason for us to provide a remedy

1 that protects human health and environment in that case.

2 So providing input, you can provide input tonight.
3 Everything goes on record. Your comments will go on record.
4 You can write it down on a piece of paper for us tonight. We
5 have that e-mail address right there. The public comment
6 period is open till August 5th. If you're in Hood River or
7 Portland next week, Tuesday night and Wednesday night
8 respectively, you can show up there, do the same thing if
9 you'd like. You can call us. We'll take your comments any
10 way we can. In fact, Paula Call and Sonya and -- we're here
11 to take those comments.

12 And those comments go into that public record that
13 we use to actually sit down and determine whether the
14 decisions we're making are adequate for the public.

15 So in looking at this, we expect to be at a record
16 of decision and have the comment responses by the end of
17 this September. It's an aggressive schedule, but we're on
18 track for that, and we look forward to your comments. Thank
19 you.

20 **MR. MARTIN:** Thanks, J.D. Thanks, Emmie. Gerry,
21 you are up.

22 **(Discussion held off the record.)**

23 **MS. LAIJA:** Sorry. Earlier I didn't get a chance
24 to give EPA's input on the preferred alternatives that were
25 identified.

1 With EPA, our main mission is to look at -- or to
2 ensure the protection of human health and the environment.
3 And in looking at these alternatives, we've determined that
4 they are protective of human health and the environment.

5 J.D. also talked about the CERCLA process and how
6 there's all these different criteria that we look over. I
7 will mention that community acceptance is also one of the
8 criteria we have to evaluate when picking an alternative. So
9 your input tonight will -- it is of importance, and we do
10 need community -- community acceptance to be able to agree
11 on a cleanup remedy. So I do encourage you to submit your
12 comments because they do make a difference.

13 **MR. MARTIN:** Thanks, Emmie.

14 So the agencies went a little over, Gerry, so you
15 can go a little over too.

16 **(Discussion held off the record.)**

17 **MR. POLLET:** So part of America Northwest is the
18 region's largest citizen watchdog group, and we work with
19 other citizen groups across the region and are presenting an
20 alternate viewpoint this evening as part of the process. And
21 tonight, as you can imagine, we really have a rather
22 dramatically different viewpoint.

23 And our viewpoint is one that coincides very
24 closely with the view of the regional consensus adopted by
25 the Hanford Advisory Board, 32 seats representing very, very

1 diverse interests all across the region, which has urged the
2 Department of Energy and the regulators to go back and
3 propose a retrieve, treatment, and dispose remedy, not
4 leaving waste, especially plutonium, in place.

5 And what we're talking about tonight is waste
6 sites with enough plutonium to make more than 70 nuclear
7 weapons from scratch in the liquid waste discharge trenches.
8 So what you have here is pie chart. The 562 is the
9 kilograms of plutonium that the Energy Department's own
10 estimate is for inventory in the soils of these units for
11 liquid waste discharge trenches, cribs, trenches, et cetera.

12 A hundred kilograms is the amount of plutonium in
13 the unlined, leaking commercial radioactive waste dump in
14 the center of Hanford next to the cleanup landfill where
15 they say they'll put a bunch of this. And 371 kilograms is
16 the amount of plutonium the Department of Energy estimates
17 is the 43 miles of unlined soil ditches used to dispose of
18 solid waste. We're very concerned that if the Energy
19 Department doesn't dig up the waste in the liquid waste
20 trenches, they're not going to go and dig up the waste in
21 the unlined soil ditches either.

22 So we call the sites the liquid waste discharge
23 sites, not CW-5, PW-1. And we encourage you to send in
24 comments and come back to public meetings on revising the
25 public involvement plans for Hanford later this year to

1 encourage the agencies to use plain language in describing
2 these sites instead of things like CW-5, PW-1 proposed
3 plans.

4 We're not just talking about plutonium tonight. As
5 you heard, there are massive quantities of extremely
6 dangerous, carcinogenic, neurotoxic, reproductive, et
7 cetera, chemicals that are -- were dumped here. The amount
8 of carbon tetrachloride that was dumped into these trenches
9 is mind-boggling. The amount taken out by soil vapor
10 extraction, while nice, is a minuscule fraction and will
11 never, never approach the levels necessary to protect the
12 groundwater and to prevent the carbon tetrachloride, the
13 dibutyl phosphate, the tributyl phosphate, hydroxylamine
14 nitrate, which they don't even mention, from mobilizing
15 plutonium, cesium, and the other radionuclides and moving to
16 groundwater.

17 We're seeing where the waste sites are. And
18 here's an inside of the Z-9 trench, which, as was mentioned,
19 this is a cement lid over the trench 120 feet wide. Think
20 about that. 120 feet wide. It's 20 feet deep. Over a 127
21 pounds of plutonium was removed in the 1970s from just the
22 top 30 centimeters of soil in this trench. Enough to make a
23 dozen nuclear weapons. And there's a massive quantity of
24 plutonium left there. And this is one of the trenches where
25 the plutonium is acknowledged to be over a hundred feet

1 deep.

2 How do we know it? In the 1970s it was a hundred
3 feet deep. We have no idea. Actually, they've done no
4 testing to see how much deeper it's gone. The proposed plan
5 is to just dig up two feet below the level of the bottom of
6 the trench. Two feet.

7 The testing of these ditches, you heard them talk
8 about a remedial investigation. I'd actually like to know
9 how much money was spent on this investigation, an
10 investigation that involved a single bore hole this decade.
11 And it's taken us this long to find out what the proposed
12 plan is. It's taken years to get here. There's one bore
13 hole for two miles of ditches.

14 The rest of the data they're relying on is from --
15 get this -- 1959 and 1970. So the waste barely had any time
16 to move by 1959. By 1970 it had moved only for -- crib had
17 ended I believe 1962. It had already gone down a hundred
18 feet. What makes us think that it's still only at a hundred
19 feet? What makes us think that the other ditches don't have
20 massive amounts of contamination deep below them? This is
21 not an investigation worthy of the word investigation.

22 Here we have a map of the Z-9 -- the trenches
23 here. So this is the area that they characterized in 1959.

24 Next slide shows the area they characterized in 1979
25 and part of the -- how it -- number didn't fit in the box.

1 And then we get to -- here's the sole extent of our remedial
2 investigation: A bore hole. A bore hole 2002. Taken them
3 nine years to get us results to say we're only going to dig
4 up two feet. That's worth our money.

5 The proposed plan for the cesium sites: Cover up, not
6 cleanup. What makes us think that in 50 years, much less a
7 hundred years or 500 years, contractors for future
8 developers aren't going to dig utility lines through these
9 sites because there won't be a fence there, there won't be a
10 sign. We should be doing the responsible thing and digging
11 them up. And when we dig up these wastes, the plutonium
12 does not -- should not be going into the landfill. It needs
13 to go into the deep geologic repository.

14 Yes, the Energy Department planned to have a
15 repository, the salt mine in New Mexico called WIPP, that
16 doesn't have nearly enough capacity for all the plutonium in
17 the soil at Hanford and its other sites. So you'd think
18 maybe they'd go back to the drawing board and propose to
19 expand it or an additional repository. Instead they're
20 saying, What we dig up we'll put in ERDF. And they are
21 talking about essentially averaging the samples in order to
22 put into ERDF.

23 The proposed plan is based on a myth that
24 plutonium and cesium doesn't move through the soil. A myth
25 busted by the fact that 40 years ago the plutonium was a

1 hundred feet deep. The cesium from high-level nuclear waste
2 tanks we know has reached groundwater. What makes us think
3 that the cesium won't move from these waste sites or the
4 plutonium won't move or the americium or the uranium?

5 So many of you -- how many of you attended the
6 tank closure waste management EIS hearings? Bunch of you?
7 Last year the Energy Department had spent over \$40 million
8 doing a model for groundwater. What would happen in the
9 Central Plateau with the wastes? And it ignored all that
10 information for this. Those models showed that the
11 plutonium level in the Central Plateau groundwater will
12 reach 2,660 picocuries per liter from these waste sites, not
13 from the tank farms, from the other waste sites because it
14 moves, and it's going to move.

15 Here are maps. This one's uranium 125 years from
16 now. Here's iodine moving 2,000 years from now. The waste
17 is going to move in the groundwater. And that's from the
18 tank closure waste management EIS.

19 And, finally, the proposed plan is based on saying
20 We're going to clean up two feet, but trust us. If we find
21 something that is 3,000 picocuries per gram, we'll dig up
22 there.

23 What is the cleanup standard for plutonium
24 elsewhere?

25 Well, here we have the Energy Department's

1 proposal that they're going to clean up if the level of
2 plutonium in the soil is 2,900 picocuries per gram.

3 Here's what the Energy Department is cleaning up to
4 where we tested nuclear weapons on Johnston Atoll: 2.1. A
5 thousand times more protective.

6 Here's what we're doing at Rocky Flats in
7 Colorado. Here's what we're doing at Lawrence Livermore in
8 California: 2.5. A thousand times more protective.

9 We deserve the same protective level of cleanup. I
10 urge you to insist that the Energy Department be required to
11 clean up to the same protective level for plutonium in soil
12 as California is applying at Lawrence Livermore National
13 Lab.

14 **MR. MARTIN:** Thanks, Gerry.

15 **MR. POLLET:** So some thoughts about what you can
16 do.

17 Thank you very much.

18 **(Discussion held off the record.)**

19 **MR. MARTIN:** Okay. So we're now going to move
20 into the question and answer, which is your opportunity --
21 get the strobe light -- to get more clarification or detail
22 on what you've actually heard, and then we'll be doing the
23 public comment period.

24 So during this time, we want to make sure for the
25 court reporter, that we actually use the microphones. So

1 you can come up to this microphone or Sonya can chase you
2 down with this one. And if you're not comfortable asking
3 your question, feel free to write it on one of the 3-by-5
4 cards that are on the table and hand it to any one of the
5 agency folks around or me and I can read it, and we can get
6 you an answer.

7 So first question. Anyone? Yes, ma'am.

8 **MS. SWARTZMAN:** Hello. My name is Margaret
9 Swartzman.

10 Early in your presentation you talked about processing
11 the water at Hanford, and I'd like a little more information
12 about that because that seems like: Is that possible, in my
13 -- in my mind.

14 **MR. DOWELL:** Fortunately I have the federal
15 project director that's responsible for groundwater cleanup.
16 And when we talk about the pump and treat systems, I think
17 it's appropriate that Briant talks about it.

18 **MR. CHARBONEAU:** Great. It's a very impressive
19 facility, actually. The first thing that we do is remove
20 the radionuclides through ion exchange. We go through a
21 bioreactor --

22 **THE COURT REPORTER:** I'm sorry. I can't hear you
23 clearly.

24 **MR. MARTIN:** Just a little closer, Briant.

25 **MR. CHARBONEAU:** Okay.

1 **MR. MARTIN:** There you go. Good.

2 **MR. CHARBONEAU:** It's a very impressive facility.
3 Construction will be completed this calendar year. The
4 first step of that process goes through a series of ion
5 exchange columns which is a lot like a water softener
6 technology where we remove the radionuclides. Then it goes
7 through a biological digester, similar to what happens on a
8 public municipal waste treatment water. That reduces some
9 of the contaminants and also breaks down some of the organic
10 contaminants.

11 Then it goes through a series of separation
12 processes to remove particulates that might have been formed
13 during the reduction process of the bioreactor. It also
14 goes through an air stripper column which will remove any
15 remaining volatile organics. Then there's a complicated
16 sludge treatment system in which the biological waste
17 products are then treated with a lyme material to stop any
18 future gas generation once that's disposed of.

19 **(Discussion held off the record.)**

20 **MR. CHARBONEAU:** Yeah. Over the last decade we
21 have been -- we've been focused on the concentrated part of
22 this plume. This new facility has a series of wells around
23 the perimeter of the plume, and that is to contain the plume
24 in its entirety until the water is -- is treated. So not
25 only are we addressing the hotspot in the center of the

1 plume, this new treatment system contains the outer ring of
2 that plume as well.

3 **MR. MARTIN:** Thanks, Briant.

4 Yes, sir.

5 **MR. KELLY:** My name's Jim Kelly. I'm from
6 Seattle.

7 This really is probably more of a question for the
8 Department of Ecology than Washington state.

9 I -- you know, as -- as a tri-party agreement
10 party, I'm wondering why the Department of Ecology is not
11 insisting upon the -- meeting the cleanup -- the stricter
12 cleanup standards that are required in hazardous waste law
13 in the state.

14 **(Discussion held off the record.)**

15 **MR. PRICE:** Yeah. Thanks. My name, again, is
16 John Price. I'm with the State of Washington, Department of
17 Ecology. And so let me do two things. I'm going to answer
18 your question. First I want to talk just a little bit about
19 Ecology's role at Hanford.

20 So Hanford has about 3,000 individual places where
21 there are environmental problems. And tonight we're talking
22 about just 20 of those. And because there's so many problem
23 areas, we split them up between Ecology and U.S. EPA, and so
24 we take turns being the lead regulating the Department of
25 Energy.

1 So the 20 we're talking about tonight, EPA is the
2 lead. But we have an agreement with EPA, and when we're the
3 lead, we consult with them, and when they're the lead, they
4 consult with us. So that's kind of what's going on with
5 this proposal.

6 So just a little bit of background. In 1976 --
7 I'm going to tell you where Ecology's authority comes from.

8 In 1976, Congress set up the Federal Hazardous
9 Waste Law, and then in 1978, the president signed an
10 executive order that made that apply to federal facilities
11 like Hanford. That's basically where Ecology gets our
12 authority from.

13 When that hazardous waste law was passed, Congress
14 specifically exempted Atomic Energy Act radionuclides from
15 that. So that's -- that's a gap in our authority. And so
16 when we have radionuclides involved, we rely on U.S. EPA to
17 make those decisions, which is what's going on here.

18 Now, where we have authority, we either use it or
19 we work with the Department of Energy and EPA to make sure
20 that things are being done according to our standards. So
21 for this particular proposal, let me just run through a few
22 of the problems where we feel like our authority does apply
23 and our standards apply.

24 So for the carbon tetrachloride, that is being
25 cleaned up consistent with Washington state standards. The

1 groundwater in this area is being cleaned up consistent with
2 Washington standards under a separate decision. And we
3 asked EPA and DOE to change their decision to accommodate
4 our standards, and they did that last year.

5 The tanks that were mentioned tonight, those are
6 being cleaned and closed consistent with Washington state
7 standards. The plutonium, where we don't have authority, is
8 being cleaned up according to the federal Superfund law that
9 EPA administers. However, last year Ecology did send a
10 letter to the U.S. EPA National Remedy Review Board. And
11 that's a group of nationwide experts that review big
12 cleanups. And this is a big cleanup because it's over a
13 hundred million dollars cost.

14 In our letter, we asked EPA to be biased towards a
15 more robust remedy, so we asked them to do more. And so
16 they have that under advisement right now. And before they
17 make a final decision, they will consult with us and seek
18 our concurrence on this decision.

19 So hope -- hope that addresses your question.

20 **MR. KELLY:** That helps.

21 **MR. MARTIN:** Dennis, did you want to answer? Tell
22 us who you are too.

23 **MR. FAULK:** Dennis -- I'm Dennis Faulk. I'm
24 choking up. I'm the program director for EPA at Hanford. I
25 just want to make a point of clarification that we're not

1 actually proposing to use 2,900 picocuries per gram as a
2 cleanup standard. That was a number that was developed
3 through the risk assessment process. This remedy is really
4 predicated on -- I'll call it a cost benefit analysis. And
5 we have some slides to show you, so... So what we did there
6 is, again, people have talked about the distribution of
7 plutonium, goes, in this case, from about 20 feet below
8 ground surface down to about a hundred feet. And we simply
9 looked at taking out a amount of material, how much we could
10 get out for the amount of given money because, ultimately,
11 what's protective of here is the cap the we're going to put
12 over the top. So, again, maybe before we go to the actual
13 comments we can show that curve because -- because it's a
14 little bit telling. And so, again, there won't actually be
15 a cleanup level on these particular waste sites established
16 for plutonium into itself. It will really be a mass
17 removal.

18 **MR. MARTIN:** Dennis, do you want to show it right
19 now or do you want to wait between --

20 **MR. FAULK:** I think we can just wait, but I think
21 it will --

22 **MR. MARTIN:** Okay.

23 **MR. FAULK:** -- help people.

24 **MR. MARTIN:** Yes, ma'am. I'll grab the mic for
25 you.

1 MS. MORRIS: My concern is --

2 THE COURT REPORTER: Louder please, and your name.

3 MS. MORRIS: My name is Nancy Morris, and I have a
4 question in that, as the pressures with budget and trying to
5 show some kind of headway in all this, which is way behind
6 schedule since this is going on for decades, I was just
7 wondering, there's a tendency to change the laws or the
8 levels that are allowed as they already have done in Japan
9 for the Fukushima disaster. There's a tendency in South
10 Carolina that the lawmakers allow them to change levels of -
11 - to lessen the standards of exposure to radioactivity to
12 accommodate the schedules of people and so on.

13 It seems to me that we're at risk of this. It's
14 very easy for you to kind of hide and doublespeak of what
15 you're really intending to do or what you really feel you're
16 going to accomplish. So I have a question as how you are
17 really going to answer to the public. And if you've already
18 spent 40 million last year on modeling that says plutonium
19 does move, and now you're sort of working on a model that
20 says it doesn't move that much.

21 MR. MARTIN: I think that's you, J.D.

22 MR. DOWELL: The question is...?

23 MS. MORRIS: Well, you're -- you're --

24 MR. DOWELL: I got it.

25 MS. MORRIS: -- changing your standards --

1 MR. DOWELL: I think I got the question.

2 MS. MORRIS: -- already after even spending \$40
3 million, and you're already trying to budget around \$10,000.

4 MR. DOWELL: Yes, ma'am. And I think I got the
5 question. It's twofold for me from what I heard.

6 The first one is that I don't know of any laws in
7 Washington state, which I can't speak to, or in the federal
8 government that are going to change the decisions that we're
9 making today on PW-1, 3, 6, and CW-5. These will be -- this
10 will be a decision based on the law as they exist today
11 under CERCLA, which the EPA holds the standards for CERCLA.
12 And then we -- we get together with the tri-party agreement
13 to make this decision final after we get the public comment.
14 So nothing's going to change for that decision right now.

15 I also don't see anything on the future budget
16 risk and budget pressure included that's going to really
17 change any of the fundamental standards that we have on the
18 site right now. I'm being as honest as I can to you. I
19 don't see anything that's doing that.

20 And do you know of anything, Moses?

21 MR. JARAYSI: (Shakes head.)

22 MR. DOWELL: You guys know of anything, John, or
23 anything that -- so we don't -- we don't know of anything
24 like that that's putting pressure on us.

25 And, frankly, I'll be on -- on the side of the

1 public. I'm part of the public, too, to prevent that. I
2 live in that area. My five- and eight-year-olds drink water
3 out of the aquifers of that system. I got -- I got a real
4 deep concern on that as well.

5 The second part of your question is interesting.
6 And -- and I want to correct some of the record here because
7 we've -- we've kind of referred back to the tank closure and
8 waste management EIS which is -- we're trying to bring to a
9 close this year. And that's the \$40 million that we spent
10 in the last three to five years, depending on how you look
11 at it, to come to a decision on the closure criteria -- or
12 not criteria, but come to the scoping of the environmental
13 impact of tank closure. And it's a little bit different
14 than what we're talking about tonight, but there are some --
15 there's some numbers and figures that we've been throwing
16 around. I want to clarify the record a little bit on that.

17 That -- that document has come to the conclusion
18 that there -- there will be plutonium impacting the
19 groundwater in two locations. And those locations are the
20 core zone boundary. And this is 2,660 picocuries per liter
21 in the year 11,848. That's 10,000 years from now. And the
22 source of the 216-D-5 reverse well which injects -- injected
23 the contaminants directly into the aquifer, and no vadose
24 migration was modelled.

25 So this is a model. So it's what we use right

1 now. And it's not part of this decision. And so as we look
2 at the model that this made, it's an unmitigated model, so
3 we know that that material was dumped there. We know that
4 it exists today. We've got samples that show it exists
5 today. We don't see that that sample is mobile. But it's
6 not related to this decision. But I'm not playing a shell
7 game with you. Let me finish real quick here because I know
8 this sounds confusing and I know it's kind of hard to keep
9 track of this stuff, so, please, if I'm confusing anybody,
10 get clarification so I make it clear.

11 The second source is in the Columbia River shore.
12 I think that's more pertinent, more germane, more -- more
13 dangerous, if you will. 4,250 picocuries per liter, that
14 will show up in the year 2983. The source is the 3 16 5 300
15 area process trenches in close proximity to groundwater and
16 the river shore.

17 If you're -- we didn't go through the areas, but
18 the 300 area is the area just north of Richland right along
19 the river where they processed uranium before going into to
20 the -- in the little, like, cylinders before it went into
21 the reactors for irradiation to take it to plutonium.

22 So the sources for both of these are directly from
23 direct burials close and in proximity to the river, and
24 they're not coming from PW-1, 3, and 6. In fact, the EIS is
25 very clear about Central Plateau. The EIS analysis showed

1 that there was no breakthrough of plutonium from waste sites
2 to the groundwater over the 10,000 year period of analysis.
3 And that's part of the STOMP model that we use. That's the
4 standard that we're using right now.

5 So let's do a scenario. Let's do a scenario here.
6 We make this final decision today and we get a better model
7 ten years from now. The CERCLA process will force me to
8 evaluate the effectiveness of the measures that we design on
9 this final record of decision to assess whether that's going
10 to be good or not. And if that model indicates that there's
11 something that we didn't know or, as we go about the process
12 of getting more information about plutonium and its ability
13 to mobilize inside the layers of soil that exist in Central
14 Plateau, like this one in 2008 from PNNL, which I don't
15 control PNNL. It's an independent group. It's a science
16 group. They don't contract us. This is actually contracted
17 -- I believe this one was contracted out of us. There's
18 several that aren't. There's a group that studies this each
19 year, so they're actively looking at plutonium and how it
20 moves in the soil.

21 The plutonium that we see in Central Plateau is
22 stable. That's all I can say right now. It's what we know.
23 It's -- we've got the single bore hole that Gerry alluded
24 to, but we monitor it. And the way we monitor it is we
25 monitor it by groundwater. So if we see a sample of

1 groundwater, sodium from Central Plateau, guess what? We've
2 got to reevaluate that record of decision. And to date,
3 since the time that we started putting this material in the
4 ground, we've not seen a sample -- maybe, correct me on this
5 if I'm wrong -- we've not seen a sample in the Central
6 Plateau that shows that plutonium is hitting the
7 groundwater.

8 **MR. MARTIN:** Emmie, did you want to add anything
9 on the changing standards question or are you good?

10 **MS. LAIJA:** No, I'm good.

11 **MR. MARTIN:** Okay.

12 **MS. MORRIS:** Based on one or more?

13 **MR. DOWELL:** No. It's depends on more than that,
14 ma'am. And if you look at the charts back there, the bore
15 hole is, in the last decade, I think that -- I'm not going
16 to -- I'm not going to argue with Gerry on that or get into
17 a discussion about that. It's based on the process
18 knowledge. It's based on samples that were taken. And a
19 bore hole basically is a large well that goes in the ground
20 and stops. Doesn't go about all the way to the aquifer. So
21 that bore hole is really a -- a stratification layer of soil
22 so you can evaluate the different soils strata and just
23 determine if plutonium is invasive in any of those strata.
24 And so that bore hole is specifically targeted to see if we
25 could find plutonium in that strata.

1 We also monitor the groundwater. So there's
2 groundwater sampling being done as we speak today. And that
3 report is annually made -- disclosed to the public. And I
4 think everyone here, you know, Gerry, and I think several of
5 you have probably looked at that each year. And that's what
6 we use to evaluate the effectiveness of the measures that we
7 make on this final decision.

8 That's the process that we're using. It's -- it's
9 legal by all standards by the CERCLA. It's not a de
10 minimus. I don't think it's a de minimus measure. It's --
11 it's doing the best we can with the resources that we have
12 to get on with the rest of the cleanup.

13 It's important for me not only as a manager of
14 Central Plateau, but also as a taxpayer and one of the
15 public who's served by the measures that we take to make
16 sure that we're getting this material out of the ground. And
17 for me to do that, I have to use those resources wisely and
18 make sure that, you know, they're balanced decisions. And
19 that's what we're trying to achieve here, is a very balanced
20 decision.

21 So, you know, that's the best I can say about it.

22 **MR. MARTIN:** So -- so the goal here is to get to
23 your guys's public comments. And we've run a bit over on
24 the question and answer, but I want to be sure we actually
25 get the questions and answers out, so if we gotta stay a

1 little bit late, we probably will.

2 Tom, are you up with a question?

3 **MR. CARPENTER:** Yeah.

4 **MR. MARTIN:** Tell us who you are, please.

5 **MR. CARPENTER:** I'm Tom Carpenter, and I just had
6 a quick question.

7 We heard some figures from Gerry on the amount of
8 plutonium in the soil now that's -- you know, the figures in
9 there, and how much would be left behind, but I didn't hear
10 anything from the Department of Energy on that. And just
11 wanted to know if you have an estimate of how much is there
12 and how much would be left behind and also how long the
13 plutonium is dangerous.

14 **(Discussion held off the record.)**

15 **MR. DOWELL:** As for the amounts of material that
16 we're going to extract, the best thing I could tell you is -
17 - and if you're talking -- you know, if you talk about each
18 of the remedies tonight in the preferred alternatives, you
19 can go back and you can see the amount of material we
20 estimate to be in those areas based on our process
21 knowledge, our sampling, and everything that we could find
22 in precedent in history that shows how these areas were
23 developed and used. So I don't have a number. I don't have
24 an exact number. It would be an estimate anyway. It's
25 probably -- you know, maybe, Virginia, you can help me work

1 on a number while I'm doing this right now, a rough estimate
2 of the number of kilograms of material we're going to leave
3 in PW-1, 3, 6 -- 1 -- 1, 6.

4 But we're going to pretty much recover all the
5 material, all the plutonium material out of PW-1 and 6, low
6 salt. We're going to take two more feet of material -- and
7 this is where I need this back on, Sonya. Where'd Sonya go?
8 Oh, wait. Here it is.

9 **(Discussion held off the record.)**

10 **MR. DOWELL:** So when we look at the -- this is an
11 example of 216 Z-1-A, okay? And Z-9 is another area that we
12 had -- and you'll see these placards back there. Just take
13 a look at them on your way out. It shows the rough amount
14 of material that we estimate was in there. We retrieved --
15 I think it's 56 kilograms of material in 1978 out of Z-9. We
16 basically took the top 30 centimeters. And that was that
17 nasty-looking pit that Gerry had. In fact, you could see
18 the apparatus in there. It looks like one of those crane
19 things that grabs stuff.

20 They took 30 centimeters of that material, a total
21 of 56 grams out, and that puts us where we're at today and
22 what we're trying to recover in these high-salt areas. We're
23 going to take another two feet.

24 Is that an arbitrary amount? No. It's the amount
25 that, after we came through the decision, when I talked

1 about the CERCLA process, and we've come through this
2 process and went public for comment input on the feasibility
3 study, we received your input, we actually came to the
4 public with a capping strategy. That was legal. That was
5 adequate. It protected the human health and environment and
6 public safety. It was adequate. We could have stopped
7 there and said Talk to the hand; we're not going to go any
8 further than this. We didn't do that. We listened to what
9 you wanted. You guys are concerned about plutonium. We
10 listened to what you guys had to say, and we're going for
11 another two feet.

12 Here's the gist of this thing. It took me a while
13 to get my head around this, so please listen. It's -- we're
14 taking two feet, but it's not necessarily going to protect
15 you any more than what's protecting you now. And I know
16 that doesn't make a lot of sense, but hear me out.

17 When we take two more feet of this material, we're
18 going to get this -- the bed's at -- the bed's about 18
19 feet. We're going to take two -- two more feet of material
20 down to about 20 feet, and that's 51 percent. I know you
21 want me to use the pointer again. So -- I guess it's
22 important for this one. And hopefully you could see this.
23 There's my little red dot.

24 So here we are at 18 feet. That's the amount of
25 material when you extract and you take out the structure,

1 that's basically the bottom of it, okay? And that's Z-1. As
2 you extract two more feet, you're at 20 feet. You see
3 here's the knee curve for where we think the material's at.
4 And this is done by a number of ways. By sampling. You
5 know, there's estimates, again modelling, but it's pretty
6 exacting modelling. It's PNNL doing the modelling for us,
7 and they're the best in the world, I think, in this.

8 So you ask yourself, Well, gee, Department of
9 Energy, why don't you go further? Why don't you go down
10 here to 64 feet?

11 Well, when you look at that, that's when you go
12 back to this balancing criteria. And the reason that we're
13 removing this plutonium in the first place is not to protect
14 the public. It's to protect a worker that would go out
15 there and dig into this material. And, oh, by the way,
16 that's in an industrial area that will be fenced and
17 protected from public access, as long as I have anything to
18 say about it. And that's a commitment that we're making in
19 that area. It's an industrial area. It's where we have
20 ERDF, our long-term disposal facilities, and it's where we
21 have to have presence so we can continue to monitor the
22 effect of these -- of these remedies in perpetuity until
23 we're finished and they're not -- no longer a risk to public
24 health, human -- human health, and the environment.

25 So as we look at the remedies for this, it's not

1 going to provide you and I any more protection. We -- we
2 assess that this plutonium in this site is stable. It's the
3 high-salt material, came in with carbon tetrachloride. It's
4 very acidic. When it's got an acidic level of 2.5,
5 plutonium is mobile. We know that. Okay? The basic pH of
6 the ground soil in this area is 8. When it gets to -- when
7 it gets past 3 to 3 and a half, it stops. It does not move,
8 and that's what we're seeing right now.

9 Okay. Do you believe me or not? Doesn't really
10 matter because there's still ongoing studies going on as we
11 talk today. There's -- there's a group that meets every
12 year on this to determine plutonium mobility. If the
13 assumptions in our modelling changes, we have to go back and
14 re-remedy. It's part of the law.

15 To me -- you know, either you believe in the
16 commitment that the government's going to be a custodian of
17 this site or you don't. And if you don't, I can't help you.
18 I feel that we are comitted to that. I feel we're going to
19 be there long-term. And we have to do that in order to make
20 sure that these remedies, the things like ERDF and IDF,
21 these big sites where we're taking all the low-level waste
22 and putting that in the large trenches that we're
23 engineering and designing for this material, this is where
24 all the stuff that we dig out of the river goes every day,
25 if it's not going down to WIPP, it's going to ERDF or it's

1 going to IDF. Or it's going to RPPDF. So that material --
2 we have to be there be to watch that material.

3 **MR. MARTIN:** Emmie, did you want to add anything
4 to how much plutonium is in there and how much stays or may
5 stay?

6 **MR. FAULK:** I wouldn't mind adding just one thing.

7 **MR. MARTIN:** Dennis.

8 **MR. FAULK:** How about I talk just really loud?

9 **MR. MARTIN:** That's good.

10 **MR. FAULK:** Again, this isn't going --

11 **MR. MARTIN:** She's -- it's getting recorded.

12 That's why.

13 **MR. FAULK:** Oh, all right.

14 So, again, one of the reasons we set this up
15 specifically this way is, again, to get an idea of mass
16 versus cost. And you -- you can't probably read that, but
17 what it does is you go around that -- J.D.'s calling it the
18 knee, if you get down to that, if I'm reading it, about 30
19 feet, you're getting 91 percent of it. It's a -- there's
20 another table that we have that then shows the incremental
21 cost. And so ultimately what the federal government's
22 trying to do is balance, retrieve all this material to meet
23 public value.

24 We've heard loud and clear again the mantra coming
25 out of the Hanford Advisory Board is plutonium is forever.

1 WIPP was built specifically to take this material and send
2 it there, so we're trying to balance what is the right
3 amount to do.

4 And, again, the way the proposed plan is set up is
5 it gives you a number of alternatives to choose from, and,
6 again, trying to help make a balanced decision.

7 **MR. MARTIN:** So, Tom, I see you have a follow-up
8 question, but I kind of want to --

9 **MR. CARPENTER:** I had the original question.
10 How much is there? How much is left? And how
11 long is it dangerous?

12 **MR. DOWELL:** Okay. So --

13 **MR. CARPENTER:** Those three simple questions.

14 **MR. DOWELL:** How much is there is illustrated. It
15 depends on site by site. I can get an aggregate number for
16 you, Tom. We didn't --

17 **MR. CARPENTER:** Do you have a problem with Gerry's
18 numbers? He put numbers up there. He says you're going to
19 leave about half of it there, and it's -- what did you say,
20 Gerry? Hundred kilograms?

21 **MR. POLLET:** The high-salt sites, which are the
22 most dangerous, you know, J.D.'s own slide shows that this
23 is plutonium which is --

24 **MR. DOWELL:** Right. I'm not arguing about that.

25 **MR. POLLET:** And that is -- I forget how many

1 kilograms.

2 **MR. MARTIN:** Closer, Ger.

3 **MR. POLLET:** The other thing to remember is these
4 estimates of how much plutonium is in the soil were already
5 proven to be grossly wrong in the past. They're really old.
6 And the Energy Department increased by threefold from 1996
7 to more recent years the estimate of plutonium in the tanks,
8 et cetera, at Hanford because these old estimates were based
9 on claims of how much weight -- plutonium went into those
10 liquid waste discharges. And it turned out that they were
11 cooking the books when they were processing plutonium. They
12 didn't want to admit how much was going out the door, right?

13 And so you the Department of Energy increased the
14 estimate. And we don't know when you say we're using -- and
15 I don't know what the source of these estimates are because
16 we couldn't find them in your documents. They're not easily
17 findable where these source estimates are. Of course we
18 only got the FS and RI link, the proper link yesterday, but,
19 so --

20 **MR. DOWELL:** So let me take one question at a
21 time. Let me go back to Tom's question.

22 So the answer, Tom, is I can't use Gerry's data,
23 but I can get you the data.

24 And the answer is, for high-salt areas, it's going
25 to be something similar to what we just saw with the knee

1 curve, because, again, the remedy is not for human health
2 and environment. That remedy is not for public safety. If
3 your point is one of proliferation, you keep referring to
4 the number of bombs that can made. Is it a proliferation
5 risk that --

6 **MR. POLLET:** No, no, no, J.D. That's not it.

7 **MR. DOWELL:** Okay. But what's the point then of
8 bombs?

9 **MR. POLLET:** The point is it's giving people
10 reference point for what it is.

11 **MR. DOWELL:** Okay.

12 **THE COURT REPORTER:** Can you --

13 **MR. POLLET:** And it's not just what gets in the
14 groundwater, J.D. Plutonium will move. If someone digs it
15 up, like take -- we -- my workshop, we talk about Harbor
16 Island. You've heard me talk about Harbor Island before.
17 Most obvious Superfund site in the Northwest right there in
18 front of downtown. EPA finishes cleaning it up with
19 industrial cleanup standard. Everyone knows it's got a cap
20 over it, no one should dig there.

21 Five years pass. Workers get contaminated,
22 hazardous waste into Elliot Bay, dirt dug up and moved all
23 over the Puget Sound region and used in construction sites
24 and homes.

25 Why? Because those fences that you swear you'll

1 be there to protect won't be there, weren't there just five
2 years later. The whistleblowers got fired who said, Isn't
3 this a hazardous waste site? They got canned. What
4 happened? Took only five years for people to forget.

5 Plutonium moves in the air very readily if you dig
6 it up, right? We know from looking at other sites that it's
7 a concern not only for our movement to the groundwater, but
8 what happens if someone intrudes on it?

9 Native American tribes have a right to live here
10 and use these resources. We expect there will be other
11 development. What will happen -- why are we leaving it
12 there instead of saying why not use a cleanup standard? Why
13 not say everything over 2.5 or even 35 picocuries per gram
14 belongs remo- -- to be removed? Why not use that instead of
15 the balancing criteria which allows you to bring in cost?

16 **MR. DOWELL:** Okay. Just a rebuttal?

17 **MR. MARTIN:** Quick. Get to the last answer to
18 Tom's and then we need to move on.

19 **MR. DOWELL:** Okay. Don't want to go into a
20 point/counterpoint --

21 **MR. MARTIN:** No.

22 **MR. DOWELL:** -- but we can't really compare --
23 compare the area in Seattle to Hanford. I just can't
24 compare that. It's not fair. We're talking about PW-1, 3,
25 and 6 tonight. And as we talk about that, we have to

1 understand that the basic premise has to be that we're not
2 going to allow development to go on in this area. Otherwise,
3 I agree with you that that would be not be adequate for
4 discussion for human health and safety. It has to be -- you
5 have to understand that in an industrial area is a different
6 area. And --

7 **MR. POLLET:** Harbor Island was an industrial area.

8 **MR. MARTIN:** We're going to move on.

9 How long is plutonium dangerous for, J.D.?

10 **MR. DOWELL:** Plutonium is dangerous for -- it's
11 got a -- it's got a 24,000-year half life. So it's going to
12 be, you know, eons. Eons. Long time. It's dangerous for a
13 long time. It's hazardous. It's an alpha emitter. It has
14 to be ingested or inhaled. It's not like gamma. Put a
15 sheet of paper between you and an alpha particle and you're
16 protected. So it has to be airborne.

17 That's why this material, you have to understand
18 two assumptions. Number one, it's protecting a worker who
19 comes into the industrial area that we are going to
20 supervise long-term for their -- for the duration of that
21 material being a risk and protective to the human health and
22 environment. And you have to agree that by the studies that
23 we have, and these are available, that what we know right
24 now, plutonium is not mobile like you talk about it is, at
25 the PW-1, 3, 6 area.

1 Our own EIS talks about the two sites that I
2 talked about that don't exist in these areas but will be
3 decisions that we have to make that talk about how to
4 mitigate plutonium in other areas. And that's a different
5 area. We're talking about a different decision tonight
6 where plutonium is stable.

7 I'm not going to say it doesn't move. I'm going
8 to say it's stable. And by our estimates and our modelling,
9 it's stable beyond 10,000 years, which, from a half-life
10 perspective, you know, we're kind of -- we're kind of
11 getting into a virtual at the real space in 10,000 years. We
12 don't know what's going to be here. We don't know what
13 technologies will be able to mitigate risk to human health,
14 risk for other things that other technologies that we can
15 bear to these -- these remediations. So it gets more
16 complex when you talk in the out years like that.

17 The industrial area, though, cannot be used for
18 general use by the public. It can't be used for things like
19 you talked about with tribes and the areas like we're
20 talking about using in the River Corridor. It's a different
21 area. It's a different place and it has to have different
22 rules. And that's why we find it protective. And that's
23 why that preferred alternative is being forwarded. So we
24 took two more feet of material because the public wanted
25 more of that material out.

1 If you have anything, any input on that, give us
2 your input tonight. That's why we're here. So please feel
3 free to make that comment.

4 **MR. MARTIN:** Your question and your name, sir,
5 please.

6 **MR. BJOR:** My name -- my name is Eric Bjor. I'm a
7 resident of Seattle. And I just had a question.

8 You mentioned plutonium in the present form --

9 **THE COURT REPORTER:** I don't think that's on all
10 the way.

11 **(Discussion held off the record.)**

12 **MR. BJOR:** Okay. So you mentioned a second ago
13 the long-term presence of the Department of Energy in the
14 inner core part of the Central Plateau. And I was just
15 wondering, as part of this proposed plan, are there plans in
16 place beyond, say, like a hundred years? Like when you talk
17 about long-term institutional controls, plutonium has a
18 24,000-year half-life, so that'd be roughly 240,000 years
19 for ten half-lives of decay. Cesium is 30 years, so that's
20 on the order of 300 years for complete decay.

21 **THE COURT REPORTER:** I'm sorry. I can't
22 understand what you're saying. You're a little fast, and a
23 little closer.

24 **MR. BJOR:** Little closer.

25 **THE COURT REPORTER:** Right.

1 **MR. BJOR:** So I was asking, usually radionuclides
2 we'd wait roughly ten half lives for them to decay
3 completely. Does that -- right? So -- so plutonium you
4 could guess could be roughly 240,000 years for complete
5 decay, and cesium would roughly 300 years. And I was
6 wondering what sort of -- if part of this proposed plan or
7 as part of DOE's long-term presence of plans are in place
8 for a presence that's that long. I mean, if you sit here
9 and put up a fence in the next five years, I'd completely
10 believe you, but I'd like to hear more about what you're
11 going to do to maintain it for 300 years, which the U.S.
12 hasn't quite hit that age itself yet, or, you know, the
13 longer term, the 20 -- 240,000 years, is there, you know, a
14 plan in place to fund that? Is there a plan in place for
15 that sort of longevity?

16 I mean, the DOE is a descendent of the Atomic
17 Energy Commission, I believe, right? I mean, like, you guys
18 have changed names. Will you change, you know, your other
19 strategies for maintaining your control of the site if
20 that's what you need to do in order to, you know, basically
21 protect public safety as an industrial area?

22 **MR. DOWELL:** Right. There's a document called
23 Comprehensive Land Use Plan that talks about how the
24 different areas of Hanford will be released or I guess it's
25 not called released because it's always going to be under

1 federal government.

2 And then there's -- in this -- in that document,
3 it talks about the inner area that we're talking about here
4 today. It doesn't talk to the specifics about the size of
5 the fence, doesn't talk to the specifics about a fence. It
6 talks to the specifics about the controls necessary to
7 prevent the risks that we have to the -- to the specific
8 worker that would be involved in that area. It's not a
9 public access area, so it's a worker, so...

10 And I believe -- this is off the top of my head --
11 it's someone who digs for a certain period of time, I think
12 it's two weeks, and it mitigates that person by having a
13 specific amount of distance, to be determined, between him
14 and the material that could -- that could harm.

15 So in protecting a -- what I would call a co-
16 located coworker, it would be a standoff distance to the
17 material that's in the ground. So it's not public access.
18 It's not going to be an area where, you know, Fish and
19 Wildlife is going to control it or the Department of
20 Interior is going to control it. It's going to have to be a
21 separate area that Department of Energy controls and
22 maintains for as long as we need to to monitor human health
23 and public safety, and the environment.

24 **MR. MARTIN:** Emmie, do you want to add anything on
25 long-term federal presence?

1 **MS. LAIJA:** On the institutional controls, I just
2 wanted to add that in the record of decision, in the actual
3 decision document, there will be specific requirements that
4 we will hold DOE to as far as how big is the fence, what
5 type of ICs are in place. And that authority, through EPA,
6 will allow us to ensure that they're meeting those
7 requirements. So as long as EPA and DOE are federal
8 agencies, we'll have that relationship in place.

9 So it's not just this, Oh, there's this document
10 that talks about it. There's that there will be hard
11 requirements that will specified in the ROD by EPA that DOE
12 will have to implement -- DOE will have to implement.

13 **MR. MARTIN:** Go ahead.

14 **MR. BJOR:** Can you hear me?

15 **MR. DOWELL:** Yeah, I can hear you.

16 **THE COURT REPORTER:** I need to hear.

17 **MR. DOWELL:** Okay. Sorry.

18 **MR. BJOR:** I'm not -- I'm not actually that
19 interested in the height of the fence. Like I said, if you
20 guys say you'll build a fence, I believe it, but in the
21 comprehensive land use plan or these other -- you know,
22 these long-term plans, is there anything that specifically
23 says, you know, what you guys are going to do, not the
24 controls that are required, but what you're going to do to
25 maintain them for something that long. I mean, that --

1 usually you guys look out about a hundred years, which is
2 possible. But is there -- is there anything in place, is
3 there any written document or anything else that
4 specifically says this is what we're going to do 250 years
5 out, 300 years out, 500 years out, like, you know, because
6 part of the DOE presence on the site is you said you'd
7 maintain these covers, you'd maintain 15 feet of soil as
8 long as the site was dangerous. And I'm wondering if
9 there's any sort of actual hard documentation on how you're
10 going to do that long-term, like just the funding, just the
11 logistics of maintaining your presence for that long.

12 Does that -- does that document exist or is there
13 -- is there any sort of plan in place where someone could
14 look that up?

15 MR. DOWELL: Paula?

16 MS. CALL: Yeah.

17 MR. DOWELL: I was going to say CERCLA.

18 MS. CALL: Yeah. We -- just about a year ago, we
19 went through the process of updating our long-term
20 stewardship plan, which is I think what the document your
21 asking about is, and so I can get you that link or if you --
22 I can give you my card and I can get that to you. But that
23 is the long -- there's a long -- it's called the long-term
24 stewardship plan. And it lays out a foundation for how DOE
25 through -- currently it's called the Office of Legacy

1 Management actually takes over these sites once all the
2 remedial actions have been completed and the institutional
3 controls are in place. So as far as long-term funding,
4 funding is done annually through the Congressional
5 appropriations process. So DOE has got to make it, you
6 know, part of the annual funding request that goes to
7 Congress and the president, here's what it will take to pay
8 for these institutional controls to keep them going.

9 **MR. MARTIN:** So I want to check in and just see a
10 show of hands. We're running late on time. I want to see
11 how many more questions we actually have. So we have one
12 back and then -- okay. Jim's got one follow-up. And -- no,
13 no. Go ahead. And then we'll go to Jim. And then is that
14 the end of the questions? Then can we go to public comment
15 at that point?

16 Okay. Cool.

17 Go ahead.

18 **JUCINTA:** So Gerry said something about --

19 **THE COURT REPORTER:** What's her name?

20 **MR. MARTIN:** And can you give --

21 **JUCINTA:** -- Native American treaty rights.

22 **MR. MARTIN:** Can you give us your name real quick.

23 Sorry.

24 **JUCINTA:** My name is JUCINTA. I'm a student at
25 the University of Washington.

1 **MR. MARTIN:** Thank you.

2 **JUCINTA:** So what I really want to know about is
3 why there isn't any tribal representatives present at these
4 public meetings. And, also, just kind of the intricacies of
5 your guys's relationship and how you guys deal with the
6 overlap of treaty rights and your guys's CERCLA approach.

7 **MR. DOWELL:** Yeah.

8 **JUCINTA:** If that makes sense.

9 **MR. DOWELL:** I got it. This is a pretty
10 straightforward answer. They have treaty rights that are
11 recognized as sovereign states, sovereign governments. So
12 they may show up at public commentary, but they don't
13 consider themselves as part of that public commentary group.
14 We actually reach out to them separately. We sent them
15 letters, two letters basically. The first one about I'd say
16 six months ago, another one this month, saying that we're
17 going out for public comment on PW-1, 3, and 6, and that we
18 would like and solicit their comments as well. I've got
19 those first comments with me tonight. We have not received
20 comments yet from the Yakima or the Umatilla CTUIR.

21 So we treat the -- we treat them very similarly
22 and solicit their input for these decisions and then brief
23 them separately.

24 **JUCINTA:** So do you guys have, like, a liaison to
25 the tribes --

1 **MR. DOWELL:** We absolutely do. We absolutely do.
2 Her name is Jill Conrad.

3 **JUCINTA:** Jill Conrad?

4 **MR. DOWELL:** Right.

5 **JUCINTA:** All right. Great.

6 **MR. MARTIN:** Okay. Jim, last follow-up question,
7 then we're going to go to public comment.

8 **MR. KELLY:** Jim Kelly again.

9 Okay. Well, you were talking about these
10 institutional controls which all of us I think are
11 expressing real doubts about, you know, whether our
12 government even can last, you know, this number of years.

13 Now, I think the point is that while you're in the
14 ground digging, should -- should you not be pushing to try
15 to get as much of these materials removed because there's --
16 obviously you're talking about cost benefit, you know,
17 weighing the cost benefit on this stuff. And if you even
18 look at the chart you put up to illustrate that, I can't see
19 any plausible argument for not even going two more feet,
20 right, because you get another 30 percent of the plutonium
21 out of there if you go two more feet.

22 Now, the point is, I'm not arguing for going two
23 more feet. I'm arguing for going as far as you can to get
24 as much of that plutonium out of there because you know darn
25 well that we have no way of assuring that we're protecting

1 future generations beyond, you know, maybe our -- your own
2 progeny, my own progeny, but, you know, several generations
3 down the road. We can't guarantee that in any way.

4 So now that he have an opportunity and we're in
5 the ground, shouldn't -- you know, shouldn't all of us be
6 working together to try to get as much of that out of there
7 as we can?

8 **MR. MARTIN:** Without letting J.D. answer, can I
9 actually say that's a really good segue into the -- that
10 sounded more like a comment than a question. Can I just
11 make -- well, we can have him answer, but can I make the
12 note for the court reporter that you would like that
13 included in the comments --

14 **MR. KELLY:** Yes.

15 **MR. MARTIN:** -- that you're arguing for removing
16 as much as is possible.

17 And, J.D., do you have a response?

18 **MR. DOWELL:** Yeah. It's just reiterating what I
19 said earlier. It's not going to protect human health and
20 the environment any more than it does now. But it's a great
21 -- it's a good comment that -- that you have a concern about
22 reclaiming more of the plutonium out of the ground. I'm
23 listening to that comment.

24 **MR. MARTIN:** Any additions, Emmie? You good?

25 **MS. LAIJA:** No. Good. Very good.

1 **MR. MARTIN:** Okay. So moving into the public
2 comment portion, so everything you guys have said so far
3 will be -- is recorded and will be kept. At this point
4 everything you say will actually be formally responded to in
5 the formal documentation that will -- that goes along with
6 the decision.

7 So if you -- for instance, there has been some
8 expression of concern about the length of institutional
9 controls, if you're concerned about it, now would be the
10 time to actually make that comment.

11 So I'm going to ask that -- again, we're going to
12 continue to use the mics and please mention your name. I'm
13 going to limit folks to three minutes just to ensure
14 everybody gets a chance. There's nothing saying you can't
15 come back a second time after everybody has had an
16 opportunity.

17 And if you're not comfortable with coming to one
18 of the mics, on the back of your agenda there's actually
19 opportunity for written comments, so feel free to just fill
20 that out and drop it with one of us in the back or Sonya and
21 we should be good, so...

22 Who wants to go first? Tom.

23 **MR. CARPENTER:** So, again, my name is Tom
24 Carpenter, and I'm the director of Hanford Challenge.

25 Put a lot of thought into Hanford over the years,

1 and this really seems like an easy one to me. As U.S.
2 taxpayers, we spent, according to the Brookings Institution,
3 about \$5.5 trillion to make nuclear warheads. A lot of that
4 money went to Hanford. Hanford made the plutonium from our
5 nuclear arsenal in about a 45-year period, and in that time
6 frame also left us this legacy of contamination. These --
7 these waste sites are dangerous for many, many years, as
8 we've been hearing.

9 I want to put some perspective on this -- on this
10 plutonium. It's acknowledged that very small amounts of
11 plutonium, if it gets into our system, can cause a cancer. A
12 spec, a microscopic quantity. And 15,000 years ago, the
13 Hanford site was 200 feet under water because of glacial
14 flooding, the Great Walluki [sic] flood.

15 Well, it turns out that that event of Ice Age, the
16 retreat of the glaciers, big glacial floods follow, that --
17 that cycle repeats in Eastern Washington hundreds of times
18 as far as geologists know. They're huge, massive floods,
19 and there are water rings in the hills and mountains around
20 the Hanford site and all over Eastern Washington way up from
21 that event happening. In other words, it's not a stable
22 geological area. It's going to be inundated again.

23 We are overdue for one of those ice ages coming
24 up. And we can expect to see, maybe not in our lifetimes or
25 our kids' lifetimes, but the profile -- geological profile

1 of the Hanford site changed from what it is today.

2 So based on 30 years of studies, we know that
3 plutonium won't move. I don't buy it. And I think it's
4 absurd to think that we have institutions that will last
5 dozens of years or hundreds of years or thousands of years
6 that will be there to make sure that nobody goes in there or
7 that it's protected from flooding or that we can stop an
8 earthquake or a volcano or whatever can happen to that area.
9 So I think Hanford is simply a very poor candidate for the
10 long-term storage of nuclear waste of any kind and of any
11 quantity.

12 Therefore, there needs to be a very rigorous
13 effort to make sure that all the plutonium that we can
14 remove from that site is taken from that site and processed
15 and treated and put into a deep geological repository even
16 if it costs a lot of money. It is not the most important
17 thing. This stuff is dangerous for a quarter of a million
18 years. And there's nothing we know about how to do -- how
19 to neutralize that except let it decay away somewhere far
20 away from us.

21 So I think that we need to take a longer view of
22 this, less of a, gee, this is driven by money; we gotta
23 balance this against our budget. Look at the \$5.5 trillion
24 that we spent on nuclear weapons and do the right thing
25 here.

1 I'm going to be submitting written comments that
2 are much more extensive and a bit more technical than this,
3 but those -- those are my major comments. And Gerry alluded
4 to the fact that the Hanford Advisory Board had an excellent
5 set of comments which we also helped develop and are part of
6 and think are a great set of comments as well. And they're
7 on the back table over there if folks want to see that.

8 Thank you.

9 **MR. MARTIN:** Next comment.

10 Please give us your name.

11 **MS. O'BRIEN:** Hello. Okay. Awesome. My name's
12 Lindsay O'Brien. I am an intern with Heart of America
13 Northwest. Gerry's my supervisor.

14 I just started the externship, so I'm fairly new
15 to what's going on to the issues that have arised [sic] with
16 Hanford. But when I review the proposed plan, I basically
17 focused on the settling tanks. Those are located, if you
18 guys look at the map, on the proposed plan on the northwest
19 side of the -- of the map.

20 And, basically, I have two main issues which I've
21 -- actually, I have several issues, but the main issues are
22 with the proposed plan which I hope will be addressed is,
23 first, the information provided about the contaminants
24 present in the settling tanks is either lacking, outdated,
25 or just simply confusing. So, for example, the primary

1 contaminants described to be found or supposedly found on
2 the settling tanks are plutonium and americium.

3 What about other contaminants? There is nothing
4 in the proposed plan stating what other contaminants, what
5 other might either are there or might be found. Just
6 because a contaminant's not primary does not mean that it's
7 not harmful, does not mean that it does not pose a risk.

8 And, also, according to all the information that
9 I've read, and I did a lot of research these last few days,
10 there's no testing, at least no proper testing has been
11 done, at least nothing in the research and the paperwork
12 does it state that any testing has been done of the settling
13 tanks currently to let us know what contaminants are there.
14 The only testing that I found out about was a
15 characterization -- and I'm not sure exactly what that means
16 -- of one of the tanks in 1984. 1984. I was born in 1983.
17 I'm 28. 27 years. Three decades. Trust me, that's --
18 every birthday I realize how long that is.

19 Technology has changed drastically. I think I
20 believe that today we have better technology to do testing.
21 Therefore, the only testing that has been done is just not
22 sufficient and not sufficient to basically really tell us
23 what's going on, what is present there and, also, what
24 remedies we should look for in dealing with it.

25 So, for example, if we found out there's other

1 contaminants, what remedies are we going to -- what remedies
2 are we going to apply here?

3 I actually had a slide this morning, but I had a
4 little fight with PowerPoint, and PowerPoint won, and -- so
5 I will pass that around if you guys want to take a look.
6 It's basically a little chart that I did which lists the
7 primary contaminants which are listed on the proposed plan.
8 And next to them, like the three columns to the right, there
9 are other contaminants which I believe, according to the
10 information on the proposed plan, which is all over the
11 place, that are likely to be found in the tanks.

12 So, for example, one of the tanks -- one of the
13 settling tanks, waste used to go through that tank prior to
14 being discharged into one of the low-salt cribs. So since
15 those contaminants have been found to be in those cribs, I
16 don't think it's unreasonable to expect them to be present
17 in the tanks as well.

18 Also -- excuse me. My second issue is that due to
19 the lack of information due to the lack of testing,
20 basically, new remedies need to be come up with. New
21 remedies need to be analyzed. Excuse me.

22 One of the remedies that was listed on the Power--
23 actually, the only remedy that was listed for the tanks on
24 the proposed plan was that, quote/unquote, "The remedy
25 proposed for tanks is to remove sludge from tanks and

1 backfill the -- backfill the empty tanks."

2 That's the only remedy that's given, or referred
3 to at least. The problem with that is, so, okay, we're
4 removing all of the chemicals from the tanks. What about
5 the tanks themselves? They're contaminated. We haven't
6 done any testing in the last 28, 27 years, so we can't
7 really determine whether the tanks have leaked into the soil
8 around it, so we don't even have any information as to
9 whether the soil right below the tanks or surrounding the
10 tanks are contaminated.

11 By leaving the tanks there -- I understand that
12 they're supposed to be encased. Or routed, excuse me. I
13 think that was the language in the proposed plan -- we're
14 still making ourselves vulnerable to the risk that that
15 contamination in those tanks can still spread.

16 So in conclusion, Hanford -- excuse me -- my
17 nonprofit organization and myself and especially Gerry, we
18 ask that prior to reviewing these -- the proposed plan prior
19 to coming to finalizing it, that proper testing be done on
20 the tanks to figure out what the contaminants are, whether
21 there has been leakage, and also test the area below the
22 tanks, surrounding the tanks, and, finally, to remove the
23 tanks.

24 You can do this by basically breaking the tanks
25 apart. You will have to encase them before disposing them

1 in a different landfill, but at least that way -- at least
2 most of the danger will be removed.

3 And somebody mentioned the standards that have
4 been used. Just one final thought. I noticed that on the
5 proposed plan, it kind of keeps going back and forth between
6 the Superfund and then RICCA. And I don't know how many of
7 you guys know this, I was actually just informed, that as of
8 1985, RICCA is the one that's supposed to be applied.

9 So the usage of any Superfund standards are just
10 not enough and are actually not the ones that are required
11 by law. So my final request is to make sure that RICCA is
12 being followed, as it's supposed to.

13 Thank you very much.

14 **MR. MARTIN:** Thanks, Lindsay.

15 Other comments?

16 **JUCINTA:** I'll try to keep it really succinct. Do
17 I have to say my name again for the record?

18 **MR. MARTIN:** Yeah.

19 **JUCINTA:** My name's JUCINTA. I go to University
20 of Washington. I'm actually doing my honors thesis on the
21 Hanford site, particularly the public participation aspect
22 of your guys's plan.

23 What I'd really like to see is more easily
24 accessible information about your alternatives and all the
25 other operations at Hanford, just, you know, so the people

1 can gain -- you know, can know about it through -- I've
2 looked at all of your websites and there's just kind of
3 surface information. It's not easy to get, like, really
4 detailed things that are actually going on.

5 Also, I was thinking maybe changing the format of
6 the meetings and increasing outreach because I've gone to a
7 lot of these and seen a lot of similar faces, same messages
8 being given, like, it seems like the communication between
9 different parties isn't quite as effective as it should be
10 or could be.

11 Also, I was wondering if any of you would be
12 willing to meet with me and give me an interview to
13 contribute to my thesis and my overall understanding of the
14 Hanford site.

15 **MR. MARTIN:** JUCINTA, can I take the first three
16 things you said as comments and then the last thing, go
17 ahead and like --

18 **JUCINTA:** Yeah. I might have to --

19 **(Simultaneous discussion.)**

20 **MR. MARTIN:** They're kind of in receiving mode
21 now, but, I mean, they can go ahead and answer that
22 question.

23 **JUCINTA:** Yeah, they can do that separately.

24 **MR. MARTIN:** We're going to not put that into the
25 formal comment record part.

1 So Emmie and J.D., do you want to answer whether
2 you -- whether you'd be willing to do an interview at a
3 later date?

4 **MS. LAIJA:** Sure. I would be willing.

5 **JUCINTA:** Awesome. I have funding to go to
6 Richard and everything, so I can contact you via e-mail and
7 stuff.

8 **MR. DOWELL:** I will.

9 **MR. MARTIN:** Okay. Good.

10 **JUCINTA:** Awesome. Thank you.

11 **MR. MARTIN:** Thank you.

12 Other comments?

13 Yes, ma'am. Over here, Sonya. And please give us
14 your name.

15 **MS. WALKER:** Hello. My name is Alera Walker, and
16 I live in Seattle.

17 I'm here to say that the EPA and Washington
18 Ecology should insist that plutonium, cesium, and other
19 chemicals are dug up and removed at all of these sites, and
20 they should have a cleanup standard for plutonium on
21 Hanford's Central Plateau which is just as protective as the
22 level of the cleanup being used at Lawrence Livermore
23 National Lab because that shows that it is possible, or even
24 the same -- the same strictness as they have for the Hanford
25 sites that are closer to the river.

1 And I think also plutonium, when they dig it up,
2 it should be sent to a geologic repository instead of just
3 leaving it near the surface because it will spread.

4 And, also, I have something to say to the
5 representatives from the EPA. It is interesting to hear
6 this evening that this proposal isn't designed to protect
7 the public, but rather it's to protect the workers. And so
8 that was -- that was great that that came out here. But I
9 thought that the EPA was supposed to be concerned with
10 groundwater contamination and concerned with the people who
11 have to live around here in the future. The reason why I
12 thought so is because it's not just called the Environmental
13 Agency. It's the Environmental Protection Agency. And so
14 that's why you guys at the EPA, the people depend on you to
15 protect us when something terrible happens to our
16 environment, and we trust you to make decisions that are a
17 matter of life and death.

18 And we're counting on you right now to insist on
19 the highest possible cleanup standards because anything less
20 would be putting lives at risk. And so that's why we're
21 holding you accountable for that.

22 And I guess, also, if you people at the EPA really
23 enjoy having have this power over life and death, you might
24 want to consider leaving the Environmental Protection Agency
25 and joining the military instead because, in the military,

1 you can kill people legally.

2 **MR. MARTIN:** Thank you.

3 Other comments?

4 **MS. MORRIS:** My name's Nancy Morris, and I just
5 wanted to add a few points to what others have already said
6 because I want us all to get out tonight here.

7 First of all, I feel there is a great need for
8 better remedies and actual attitudes towards removal of this
9 waste. And what I mean by "attitudes" is that you might
10 say, sir, that your grandchild might be trying to deal with
11 this legacy, and I think that is a very -- I don't know --
12 it's kind of a talk that doesn't really set well with me
13 because you can also easily leave the area once you realize
14 that all is lost and go with your retirement that's been
15 supported by the taxpayers.

16 And, however, if we were all required to meet
17 certain standards where it's not just dependent on a few
18 individuals or their -- their stakes in all this, I think
19 we'd all be better off and that we had a better citizen
20 committee involved with this that included nonpartisan
21 scientists and so on. There are definitely remedies out
22 there currently being researched about the geological
23 chambers being dug.

24 I don't even know at this point if you've reached
25 glassification in any of the waste. There's not even a

1 standard stability across the board at this point with the
2 waste of plutonium. And the kind of energy that's being
3 expended doesn't even equal the kind that was exhibited for
4 the Manhattan Project that gave us the weapons of mass
5 destruction that left us with this nightmare legacy. And
6 that should be changed and recognized that we have nuclear
7 power plants all around the United States, around the world,
8 and plutonium is ever-present with us.

9 We have to be able to deal with this in some
10 fashion within our immediate generation and be realistic
11 that we may not be available to answer questions a hundred
12 years from now.

13 And I'd like to end with one quote. This is from
14 Dr. Kathleen Dean Moore who's an ethics professor at OSU.
15 "We have an affirmative moral responsibility, individual and
16 collectively, to leave the future of world rich in life-
17 giving possibilities as a world we inherited."

18 Thank you.

19 **MR. MARTIN:** Thank you.

20 **MS. SWARTZMAN:** Again, my name is Margaret
21 Swartzman, and I just want to say how impressed I am with
22 Tom's comments and various other people here.

23 Definitely Hanford is a disaster, and we're all
24 trying to deal with it. And I hope -- I really do want to
25 put my trust in you, and I have great doubts because the

1 problem is so huge. And -- but our intent must be to go
2 beyond what we think we can do, to do as much as we possibly
3 can to put the plutonium and other materials in geological
4 stable environments.

5 We have -- we've learned through other places the
6 tremendous human cost of our nuclear idiocy. I mean, we can
7 look at Chernobyl and all of the horrors of the people in
8 Russia that -- that live with, for generations for -- none
9 of their -- I mean, forests that cannot be entered for,
10 what, five generations, maybe more. I mean, we don't want
11 that to be happening in Portland, along the Columbia River.

12 We must -- it's not a roof on a house that we're
13 suddenly having to find the money to put on the house in
14 order to preserve it. It's -- it's greater than that. And
15 we mustn't lose sight of that no matter the difficulty of
16 our financial times, no matter the difficulty of our
17 political times. This is too central to our humanity. And
18 that's all I can say. I mean, you know what I'm referring
19 to. And you know that -- that this is unborn children we
20 haven't even -- we can't even imagine them yet.

21 **MS. SORKIN:** My name is Jacqueline Sorkin, and
22 Gerry asked me to put a face to the word cancer.

23 And I'm -- I'm hearing a lot of things about how
24 we're putting carcinogenics into the groundwater, and it
25 scares the hell out of me because I've been living with

1 cancer for over 30 years. And I probably will not be around
2 when this all comes to a head, and that's okay too. But the
3 groundwater will be contaminated, and there will be truck
4 route exposures, too, and there will be carcinogens at the
5 truck routes, you know, if we make a repository.

6 Anyway, cancer risks from radiation are higher,
7 especially for children and women, than previously
8 estimated. 15 millirem of annual dose is now projected to
9 cause eight fatal cancers for every 10,000 adult males
10 exposed. The risk to children is three to ten times higher.
11 The fatal risk to children using the groundwater, including
12 Native Americans exercising their treaty rights to live and
13 use the resources at Hanford, will be over 2 percent.

14 If the Department of Energy goes ahead with its
15 plan, there'll be an increase in cancer risk to future
16 generations using the groundwater tenfold. Exposure to even
17 an extra one millirem per day would be expected to cause an
18 increase in fatal cancers of about 2 percent for an exposed
19 adult male and three to ten times that risk for a child.

20 **MR. MARTIN:** Thanks, Jacqueline.

21 **MR. ROSENFELD:** Hi. I'm Eric Rosenfeld. I'm an
22 intern at Hanford Challenge. I'd just like to follow up
23 with what JUCINTA was saying about the difficulty of the --
24 understanding the proposed plan.

25 I have started working on it about two weeks ago,

1 and it wasn't until yesterday at about 4 o'clock that I
2 finally finished just making a simple fact sheet just fully
3 grasping everything. Like I was -- the Operable Units, all
4 that stuff is just very confusing. And if -- I was
5 actually, like, tasked to work on it, and I feel like for
6 someone who is not given that job, it's incredibly difficult
7 to grasp anything that is being proposed in the plan that's
8 360 pages and that is, what I'm told, a very short plan. And
9 so just I would like to see a bit more accessibility for the
10 public.

11 **MR. MARTIN:** Thanks, Eric.

12 Okay. We're getting close to our time, but we
13 want to be sure -- Gerry, did you have a comment?

14 **MR. POLLET:** First off, I'd like to ask that the
15 formal record include what went before the formal record
16 began because I think there was a lot of really terrific
17 discussion and points being made from the public, and people
18 are always hesitant and feel like, Well, I already said
19 that; I don't need to say it again. And so we'd like to ask
20 that everything all of you said earlier be in the record and
21 be responded to formally later.

22 And, secondly, I think it is really important to
23 build on the point that was just made that the proposed plan
24 is pretty -- not only incomprehensible, but the materials
25 sent out, while there was nice effort at making a guide,

1 anyone who looked at an e-mail that said "proposed plan for
2 CW-5" is going to go back to sleep and not have a clue what
3 this is about.

4 The agencies were urged by the Hanford Advisory
5 Board Public Involvement Committee and by the stakeholder
6 groups to put out a notice that said "proposed plan for
7 cleanup of the plutonium liquid waste discharge sites." That
8 would be understandable. It would be English. And you need
9 to take this to heart.

10 It's disheartening to me that, because of the lack
11 of time, we didn't have -- we didn't -- these meetings were
12 not set with 45 days notice, per the public involvement
13 plan, so we couldn't do a mailing in time to tell thousands
14 of people about it. We had to rely on e-mail. And that's
15 very difficult to get people to turn out to. And your
16 mailings and e-mail basically talked about this proposed
17 plan that was incomprehensible.

18 If people want to look further and review the
19 comments, as we discovered in the last 24 hours, the link
20 was actually broken. If you search for the remedial
21 investigation in the administrative record, you're faced
22 with a search result of 600 documents, and you can't figure
23 out which remedial investigation was actually the one relied
24 upon for this proposed plan. Same with the feasibility
25 studies. It's ridiculous.

1 What would make sense is why not put out a
2 document that says Here's the link to the primary documents
3 so you can actually read it and review it and see did they
4 actually report when they characterized the sites and what
5 was in the sites.

6 And that brings us to the difference between state
7 hazardous waste law and the balancing act on the high-wire
8 of CERCLA Superfund which doesn't have strict criteria, but
9 we're fortunate because state law's also supposed to apply.

10 And in this case, and I'll turn over and walk over
11 to John Price from Ecology, hazardous waste law applies to
12 every hazardous waste stored, treated, or disposed after
13 1985 on the Hanford site. We've had this conversation many
14 times. Those storage tanks that Lindsay O'Brian was talking
15 about still have waste in them. Over a thousand liters or
16 2,000 liters in one of them. I forget what quantity is in
17 the other. It's still storing waste; therefore, it's under
18 your jurisdiction at Ecology as a RCRA storage tank. And it
19 is subject to the more stringent standards that say you have
20 to actually find out what the heck is in it. And if those
21 are extremely hazardous wastes, you have to remove the tank.
22 And, actually, there's no legal place to even landfill it in
23 the state of Washington.

24 Instead, we have a plan that says we're going to
25 remove the contents, put them in a landfill that -- where it

1 might be illegal to put them in, and leave the tank which
2 might be illegal.

3 For the cesium sites, we have a similar situation.
4 For ditches, we have some of the ditches that took hazardous
5 waste all the way till the year 1995. Now, the Energy
6 Department, for the goodness of their hearts, didn't end
7 dumping waste in these unlined ditches without treatment in
8 1995 because it was just out of the goodness of their heart,
9 about 30 years after everyone else stopped dumping liquid
10 wastes without treatment in unlined ditches. They did it
11 because they were sued and forced to stop in 1995.

12 That's the point of having institutional memory.
13 They're not very good at keeping commitments or following
14 the law. And, again, the hazardous waste law for state and
15 federal hazardous waste law, and our state rule says you
16 have to characterize what is actually in a trench and the
17 aerial extent of the contamination that is spread from it
18 under our federal and state hazardous waste law, not just
19 relying on characterization from 1970.

20 In 1970, the Energy Department didn't believe --
21 well, there wasn't a hazardous waste law for it to follow.
22 In 1985, it still wasn't willing to say it was subject to
23 that federal and state hazardous waste law. It fought it
24 tooth and nail. So even if the data was collected in 1985,
25 they wouldn't have done characterization of what the

1 chemical hazardous wastes were. 1970 they certainly didn't.

2 They didn't try to identify which of these were
3 corrosives, acidic, flammable, which of these need to be
4 treated in what fashion and removed. We're talking about
5 plutonium digging up two feet. But that same waste site
6 has, I think -- I won't go back and look it up -- I think
7 it's 300,000 liters of carbon tetrachloride in it and
8 hundred thousand liters of dibutyl phosphate, tributyl
9 phosphate. And we don't even know how much hydroxylamine
10 nitrate was put into these trenches. They haven't reported
11 it. Just failed to characterize for it. But we know it was
12 used and discharged.

13 If we're following our federal and state hazardous
14 waste law, we need to go back and recharacterize these sites
15 properly and find out what is actually in them and then
16 apply the state law that says. For instance, on PCBs, the
17 Energy Department says they won't move; we don't need a
18 groundwater protection standard. Just like for plutonium;
19 it won't move; we don't need a groundwater protection
20 standard.

21 Well, we need a standard, and the state has a
22 standard for those chemical wastes, and it says essentially,
23 roughly, if you got level X, if the groundwater standard
24 level is Y, you have to -- you can't be more than ten times
25 it in the soil. We know we're way above that for these

1 chemical contaminants and yet they're saying we'll just dig
2 up two feet of soil or we'll just cover up the cesium sites.
3 That's not cleanup; that's a coverup.

4 We urge you to go back to the drawing board one
5 more time. Once more it's in the breach, dear J.D.

6 **MR. MARTIN:** Okay. Are we good to call this one,
7 you guys? Any burning comments?

8 Before you leave, Jucinta especially, but all of
9 the participants, there's actually a meeting survey on the
10 back table, so we'd like you guys to pick one of those up
11 and tell us what was good, what was bad, what worked, what
12 didn't work, what we could do better in the future. Those
13 are super important to the public involvement folks. And,
14 again, thanks for --

15 **MS. FRANKFORT:** Yeah, I actually would like to
16 make a comment.

17 **MR. MARTIN:** Would you like to make a comment?
18 Please give us your name.

19 **MS. FRANKFORTH:** Is this on? Hi. My name is Dee
20 Frankforth. I'm a resident here in Seattle.

21 Six hours ago I was not planning on being here
22 this evening, but I found myself here and, frankly, quite
23 riveted for three hours because it's really clear to me that
24 the federal and state employees are here, are trying to do
25 the best job that they can, but there have been a plethora

1 of numbers thrown around tonight. Five and a half trillion
2 dollars from Tom. 240,000 years by a number of people.
3 Twenty-one sites. Twenty-one sites out of -- I forget, John
4 Price, out of 300 or 600 -- 800? 21 sites out of 800. This
5 is barely the surface of what has to be addressed.

6 Twenty-one sites, by my calculation at best, we
7 had 21 nonpaid people here tonight to talk. How in the
8 world, how in the world can you expect the public to be able
9 to comprehend, let alone respond, to something of this
10 magnitude? It is appalling.

11 And I can only say with five and a half trillion
12 dollars spent to create this issue, there has to be a
13 commensurate amount of will and money to clean it up.

14 **MR. MARTIN:** Thank you, Dee.

15 Thanks everybody for coming out tonight. And
16 please get a meeting summary or survey and let us know what
17 you thought.

18 **(Whereupon the Proceedings were concluded at 9:08**
19 **p.m.)**

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1 CERTIFICATE

2
3 I, Eva Jankovits, do hereby certify that pursuant
4 to the Rules of Civil Procedure, the witness named herein
5 appeared before me at the time and place set forth in the
6 caption herein; that at the said time and place, I reported
7 in stenotype all testimony adduced and other oral
8 proceedings had in the foregoing matter; and that the
9 foregoing transcript pages constitute a full, true and
10 correct record of such testimony adduced and oral
11 had and of the whole thereof.

12
13 IN WITNESS HEREOF, I have hereunto set my hand this
14 24th day of July, 2011.

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18
19
20 /Signed September 29, 2013
21 Eva Jankovits Commission Expiration
22
23
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CORRECTION SHEET

Deposition of: Public Meeting (Vol 2) Date: 07/21/11

Regarding: Proposed Cleanup Actions of Hanford
Waste Sites

Court Reporter: Eva Jankovits

Please make all corrections, changes or clarifications to the testimony on this sheet, showing page and line number. If there are no changes, write "none" across the page. Sign this sheet on the line provided.

Page	Line	Reason for Change
<u>84</u>	<u>25</u>	<u>Misspelled name; Emmie to Emy</u>
<u>85</u>	<u>8</u>	<u>Misspelled title; American to America</u>
<u>87</u>	<u>20</u>	<u>Misspelled name; Emmie to Emy</u>
<u>92</u>	<u>18</u>	<u>Incorrect term; true to TRU</u>
<u>92</u>	<u>20</u>	<u>Capitalize; Waste Isolation Pilot Plant</u>
<u>92</u>	<u>23</u>	<u>Incorrect term; true to TRU</u>
<u>96</u>	<u>17</u>	<u>Misspelled name; Emmie's to Emy's</u>
<u>98</u>	<u>6</u>	<u>Incorrect acronym; APA to EPA</u>
<u>98</u>	<u>7</u>	<u>Capitalize; Tri-Party Agreement</u>
<u>98</u>	<u>11</u>	<u>Capitalize; Tri-Party Agreement</u>
<u>98</u>	<u>20</u>	<u>Misspelled name; Emmie's to Emy's</u>
<u>98</u>	<u>23</u>	<u>Misspelled name; Emmie, to Emy</u>
		Signature <u>Lynne Jegeler</u>
		Representative

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Page	Line	Reason for Change
<u>102</u>	<u>8, 11</u>	<u>Misspelled name; Emmie to Emy</u>
<u>105</u>	<u>6</u>	<u>Misspelled name; Emmie to Emy</u>
<u>106</u>	<u>17-18</u>	<u>Capitalize; Plutonium Finishing Plant</u>
<u>108</u>	<u>1</u>	<u>Misspelled name; Emmie to Emy</u>
<u>111</u>	<u>20</u>	<u>Misspelled name; Emmie to Emy</u>
<u>112</u>	<u>13</u>	<u>Misspelled name; Emmie to Emy</u>
<u>121</u>	<u>9</u>	<u>Capitalize; Tri-Party Agreement</u>
<u>126</u>	<u>12</u>	<u>Capitalize; Tri-Party Agreement</u>
<u>130</u>	<u>8</u>	<u>Misspelled name; Emmie to Emy</u>
<u>136</u>	<u>18</u>	<u>Misspelled word; comitted to committed</u>
<u>137</u>	<u>3</u>	<u>Misspelled name; Emmie to Emy</u>
<u>146</u>	<u>24</u>	<u>Misspelled name; Emmie to Emy</u>
		Signature <u>Lynne Jezela</u>
		Representative

