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HANFORD SITE
300 Area Proposed Plan for Cleanup

MEETING

HELD ON
THURSDAY, AUGUST 8, 2013
7:00 P.M.

BEST WESTERN HOOD RIVER
1108 EAST MARINA DRIVE
HOOD RIVER, OREGON

MEETING**HELD ON****THURSDAY, AUGUST 8, 2013****7:00 P.M.**

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6 **MR. DUNNING:** All right. Good evening
7 everyone. I'm Dirk Dunning with the State of Oregon
8 Department of Energy. We don't actually have any
9 involvement in tonight's meeting other than saying
10 welcome and thank you for all coming out expressing
11 your opinions and your views.

12 Principally this is going to be a show by
13 the Tri-Party agencies the U.S. Department of
14 Energy, the Washington State Department of Ecology
15 and the Environmental Protection Agency and I'm sure
16 that they're going to be very interested to hear
17 your views on all kinds of things about the 300 area
18 cleanup at Hanford. And with that, I'm going to
19 turn you over to Dieter Bohrmann with our State
20 Department of Ecology.

21 **MR. BOHRMANN:** All right. Thanks, Dirk.

22 As Dirk said, our focus on tonights
23 meeting is the proposed plan to cleanup soil and
24 groundwater in Hanford's 300 area. There's some
25 posters in the back I think many of you got a chance

1 to look at those and kind of asses the stage for
2 what this proposed plan is about and what the area
3 is that we're talking about.

4 My name is Dieter Bohrmann. I'm with the
5 Washington Department of Ecology and I'm going to be
6 wearing my moderator hat tonight, though. U.S.
7 Department of Energy and Environmental Protection
8 Agency will be taking the lead in the presentation.
9 So get going in just a second here. I want to go
10 over the agenda real quick.

11 We're going to start with introductions by
12 J.D. Dowell, Assistant Manager of the U.S.
13 Department of Energy Richmond Operations Office.
14 He's going to give a quick overview of the Hanford
15 site, the 300 area, and he will turn it over then to
16 Mike Thompson who is also with the Department of
17 Energy. He's going to give a little more detail
18 about this plan about the 300 area and then Larry
19 Gadbois from the Environmental Protection Agency
20 will have a few words. And that will be followed by
21 Dan Serres from Columbia River Keeper who is going
22 to present their perspective on this cleanup and
23 then it will be your opportunity to have some
24 questions and answer with us. This will be a chance
25 for us to have a conversation about what you just

1 heard and any lingering question you might have
2 about this area or other parts of Hanford or how
3 they relate to this decision tonight.

4 And after the Q&A, we're going to be
5 following that up with the conclusion of our meeting
6 which is the formal comment area. Now, if you
7 signed in, you had an opportunity to check the box
8 to indicate if you were interested in giving formal
9 comment tonight. So I will be going over that list
10 in the order that you signed up at that time and if
11 you didn't sign up and you're interested in making
12 comment, once we get to the end of the list there'll
13 be an opportunity to -- there'll be an opportunity
14 to comment so -- and just keep in mind too that this
15 is not your last opportunity to comment. The
16 comment period runs through September 16th so you
17 may comment in writing by mail or email up until
18 that time.

19 One other distinction I want to make
20 between the Q&A session which will be a conversation
21 with the agencies and you and the formal comment
22 period is that we won't -- the agencies won't be
23 responding directly at that time when we -- when you
24 give your comment for the record. There's a
25 transcriber here that will be recording all your

1 comments and the agencies will respond to those
2 comments at the conclusion of the comment period, a
3 couple weeks after that they'll be issuing what's
4 called a "Comment Response Document," and all of the
5 responses to your comments tonight and throughout
6 the whole comment period will be handled at that
7 time. So let's go ahead and get started with J.D.,
8 and thank you again for coming.

9 **MR. DOWELL:** Thank you, Dieter, and thank
10 you all for coming again. You're going to hear that
11 a lot tonight. We work for you. We are federal
12 employees. We're paid by the taxpayers. You're the
13 taxpayers. We're here to listen to what you have to
14 say about this decision.

15 This is a very complex decision. I've got
16 some other resources that are here that are going to
17 help answer questions later. During the formal
18 question/answer period we want to focus on 300, but
19 we're here throughout the night after the
20 presentations are complete and the Q&A period is
21 done, to answer any of your questions that we can
22 about the Hanford site that we're capable of doing
23 that and I'll talk a little bit more about that in a
24 second.

25 I do have Jim Hansen, Dr. Jim Hansen,

1 right there. He's a risk manager and doctor of
2 biology that does our studies on fish and the risk
3 analysis of the site. I have Brian Charbeneau who
4 is the federal project director for groundwater and
5 soils. And in the back, Sonya Johnson and Kim
6 Ballinger are our folks that handle community
7 relations. They'll gladly take your input. And
8 let's see, we have Ed and Kim who are our support
9 tonight and we can't forget those folks. They kind
10 of keep the wheels on the bus.

11 Now, this is our third presentation and
12 hopefully we've got this right. The last one went
13 very long. It's a complicated issue and we were
14 trying to get this -- the best thing we can do is
15 communicate why we're making this decision to you.
16 We owe you that. We take this very seriously. We
17 don't come out here because it's something that we
18 get a road trip or anything like that. This is
19 where we get public comment at that's an important
20 part of what we do here. So we again, thank you for
21 coming.

22 So from the standpoint of the Hanford
23 cleanup are as you all know, 47 years of operation
24 started in 1943. It concluded in 1989. We've been
25 cleaning up that site for about 25 years now and

1 we're getting to the final records of a decision,
2 and when I say final, the only reason I say that for
3 the river corridor is because are in our interim
4 decisions right now, but these are the records of
5 decision that will sustain our cleanup and
6 remediation goals for the end of life of the site.
7 So when you look at the site 586 square miles, this
8 site here. It's broken down into three general
9 areas.

10 There's an outer area the Hanford Reach
11 National Monument. There's a river corridor which
12 is like the yellow area, outline in the yellow area
13 up here. And that's about 220 square miles, and
14 then there's a plateau right here which is broken
15 down into an inner area and outer area that makes up
16 about a total of 75 square miles. Most of the
17 processing that occurred for the final plutonium
18 material was in the central plateau area. That's
19 where the uranium rods had been eradicated at the
20 reactors on the river corridor came for final
21 processing into plutonium. We had nine reactors
22 along the river corridor and then we had the 300
23 area which is the focus tonight.

24 So when you look at the 300 area where
25 it's located, it's located right where the star is

1 and this is basically the area where uranium came
2 was turned into fabrication fuel rods on the order
3 of about 20 million pieces of uranium were probably
4 processed throughout the life history of those 47
5 years of operations before they were sent up to the
6 reactors along the river. So you're going to hear a
7 lot of detail about that tonight and it's an
8 important place to start. There's a lot of -- like
9 I said, there's a lot of complexity to this. We've
10 whittled this down so we balance the time that you
11 have for questions and answers to the briefings and
12 I hope we have that balance right.

13 We're about 88 percent complete with the
14 220 square miles of river corridor work. That means
15 that we'll go with whatever is the decision, we'll
16 still have a little bit of work left over. We also
17 have pump and treat systems. Brian is the manager
18 of those systems that will continue to operate along
19 the river corridor that support the decisions made
20 in these final records of decision. We also have
21 the reactors which albeit the fuel has been removed,
22 the reactor bodies, the buildings themselves stay
23 there and are cocooned for about 70 more years until
24 some of the inherent radiation dies off and we can
25 be safer about removing those facilities.

1 So of the six areas we're going to be
2 talking about the 300 area and like I said, that's
3 where fuel is fabricated to go into the reactors.
4 That's where we did a lot of research and
5 development for test fuels to determine what was the
6 best fuel to use in the reactors. Now, there's
7 three other slides, you got a handout on this so
8 when you look at these other slides, these are
9 pretty much background on why we're here and what
10 we're doing. This is the circle process. This is
11 kind of like a map of you are here. This is where
12 we're at right here, addressing public comments. We
13 go through a detailed process by which propose these
14 plans for cleanup and develop remediation plans.
15 This is where we evaluate the alternatives that
16 we've determined, bringing them to the public and
17 this is your time to comment on them. So it's
18 critically important that you get all your questions
19 answered and you understand the very complex
20 decision process in this one hour or two hours
21 tonight.

22 It's a daunting task but we're here to do
23 that and we'll spend as much time as you need us to
24 do that. This is also an important document here.
25 It's also on a placard back there. This is the

1 criteria that we use to make decisions in the circle
2 process. The threshold criteria to even be
3 considered for remedy, it has to meet the threshold
4 criteria. The balancing criteria is where we take
5 five areas and we evaluate the give and take, the
6 cost benefit, whatever you want to call it, the
7 balancing of what are -- it's a decision balanced
8 across the five different principals in those
9 criteria. And then lastly we do modifying criteria.
10 That can't happen until we take it to the public so
11 that's what we're here to do tonight is get your
12 input on that, find out if there's ways we need to
13 tweak this or change it or if we made some
14 assumptions that don't make sense, this is the time
15 to get that input.

16 Lastly, this is the four areas of
17 protection and it's kind of self-explanatory but
18 when we look at something, we're looking at three
19 dimensions of a decision in these areas because as
20 material leaked into the ground, obviously we have
21 to consider groundwater and soil. We have to
22 consider the facilities we're taking down. That's
23 what this shows so human health is "HH", and the
24 ecological impact is "ECO." So when you look at
25 those four dimension, that's the way we look at it

1 and that will come out in the brief tonight that
2 Mike presents.

3 Again, this is the process that really,
4 really puts the cap on whether or not we're doing
5 this right. Like I said, we take this very
6 seriously. We work for you. We're here to take
7 your comments and answer every question that you
8 have and make sure you understand exactly what we're
9 doing at Hanford site and make that you're
10 convinced, even though you may not trust us, you're
11 convinced that we've don the due diligence to at
12 least study it hard enough that we can be
13 trustworthy. So on that note, I'm going to turn it
14 over to Mike Thompson and he's going to take us
15 through about 20 minutes of this brief on the 300
16 area. Mike?

17 **MR. THOMPSON:** Okay. Can you hear me? I
18 assume you can. I've got a little bit of a sinus
19 infection tonight so I hope my voice holds through.

20 Good evening. I'm Mike Thompson. I've
21 been working at the Hanford site for 30 years now
22 and been involved in the 300 area on and off for
23 most of that time. And I live in the Tri-Cities. I
24 live in Richland, as a matter of fact. I live back
25 up in here. I get my drinking water from the first

1 public discharged which is -- public intake I should
2 say which is right about here. The City of Richland
3 gets its drinking water from the Columbia River
4 right there. And I drink that water, my wife drinks
5 that water, my children and my grandchildren drink
6 that water. So it's -- wouldn't it be elegant if
7 everybody on the Hanford waste site had to live
8 immediately downstream and drink the water.

9 So the 300 area is southeast corridor of
10 the Hanford site. It's major mission during the
11 life of Hanford was the fabrication of the uranium
12 fuel rods which then went to fuel the reactors.
13 Secondary mission was research and development.
14 That's now flipped of course. There's a continuing
15 research and development mission for the 300 area
16 and will continue to be one for quite a while yet
17 with Pacific Northwest National Laboratory. Some of
18 the facilities that are there within the cleanup
19 area will have to stay there because they're mission
20 critical to the laboratory. But we are making
21 decisions for the waste sites that are associated
22 with those facilities now and we won't have to go
23 back and revisit it. So when those facilities are
24 done, we can demolish them the decision will be in
25 place what to do with those. So we think that's the

1 right thing to do.

2 We'll talk a lot about this area right
3 here which is where -- this was the liquid waste
4 disposal areas. This is right after it was dug up.
5 About 60 to 140 tons somewhere in there of uranium
6 dissolved in fine particulate, got disposed in
7 liquid waste to the ground and the ground was to
8 serve as a sponge to hold that back, and this is the
9 source of uranium plume that we see today. And
10 we've done a significant amount of cleanup there.
11 We've dug over 15 feet, the vast majority the mass
12 of uranium out and hauled it up to the central
13 plateau. We dug deep and we dug far enough that the
14 little bit of residual that is left behind is enough
15 that it will not impact human health or the
16 environment through direct exposure especially since
17 we pout 15 foot of fill over the top of it. But
18 it's also at a low enough concentration that water
19 permeating from above through rainfall and snow melt
20 will not drove uranium to the underlying groundwater
21 at a level that will keep sustaining the plume.

22 However, what does happen, and we'll talk
23 about this a lot, is the river goes up and down in
24 response to the dams and the groundwater in turn
25 gets pushed up into some of this and that's what's

1 continuing to feed the plume out there, and we'll
2 talk about our plans on what to do with that.

3 So this is looking north over the city of
4 Richland. It is very clear where the city of
5 Richland is right here, this being Pacific Northwest
6 National Laboratory. We've had some conversations
7 about submarine reactors. This is as far as the
8 barges come and then they go to a crawl vehicle and
9 then it gets pulled up and all the way up into the
10 central plateau. But this is the industrialize core
11 part of the 300 area here and the whole 300 area
12 extends clear up in here next to the energy
13 northwest site because they're two large burial
14 ground facilities where nuclear waste from the 300
15 area were used to dispose of waste that is part of
16 that decision. Columbia River comes by, comes down
17 through here. It's 115,000 cubic feet per second
18 average annual or daily flow. When it gets down to
19 here it's about twice that.

20 This -- this is my playground here. So
21 the 300 area, the decision incorporates all the area
22 from the city of Richland all the way up by the
23 Energy Northwest facility and includes 618-11 burial
24 ground, 618-10 burial ground and everything within
25 here burial ground, like the waste disposal

1 facilities, structures and all. It does not include
2 the Hanford Patrol Academy. This is where they
3 train the Hanford Patrol. The Hammer which is a
4 training facility down here. These two things are
5 still in service, still being used by DOE as
6 ongoing, and it does not include Energy Northwest
7 which is not part of the Department of Energy. It
8 does include all the waste that was generated in the
9 300 area which is again why we're dealing with this
10 up here. The 400 area, the Fast Flux Test Facility,
11 its disposition is not in this because it's a NEPA
12 decision, National Environmental Policy Act.

13 It does not also include the groundwater
14 plumes that come from the 200 area fill that are
15 coming across the site. Our tritium plumes used to
16 come all the way down to the 300 area hundred but
17 the tincture of time is taking care of that. It's
18 got a very short half-life, about 12.8 years. It's
19 decaying back away and getting smaller all the time.
20 So it's decaying backwards so the iodine, nitrate
21 and tritium plumes from the 200 east area that come
22 out and go around the 618-11 burial ground also is
23 not included in this decision. The nitrate plumes
24 from off site down here, this is from agriculture in
25 another industrial plant. There's part of the

1 decision says we're going to watch that but any
2 actionable decision we'll have is outside of this
3 decision because it's not ours.

4 So the primary risk-driving contaminants
5 in the 300 area -- I'll come over here where I can
6 see the other people for a while. In the soils we
7 have of course uranium. Uranium is a big ticket
8 item in this 300 area because that was its mission
9 out there was to -- was to mill uranium into a form
10 that could be used up in reactors. So uranium has
11 issues in turn primarily from metal toxicity but
12 it's also an alpha radiation emitter so in terms of
13 ingestion and inhalation, it can be toxic that way.

14 So in the soils, the risk-driving
15 contaminants are uranium, both as metal and as an
16 isotope, cesium-137 which is a fission product, a
17 cobalt-60 and strontium-90, those two are also
18 fission products. These came from primarily from
19 fuel that was brought back to the 300 area after it
20 was eradicated and they did experiments on it. So
21 there is some of that out there especially in these
22 two big burial grounds, 618-10, 618-11. And
23 alachlors(ph) of PCBs in the soils. And groundwater
24 we're also looking at uranium in the terms of gross
25 alpha, ingestion of an alpha producer. Uranium is a

1 toxic metal and tritium nitrate and there's some
2 vestiges of organic chemicals that were driven deep
3 into the system that the vast majority of it has
4 been flushed out because it -- because it was driven
5 deep into some very tight zones, some of those tight
6 zones still have some of these organic chemicals and
7 they're deep in areas where they don't yield to
8 wells.

9 So if you look at the progress that are
10 being made in the 300 area it's absolutely
11 phenomenal what has gone on out there. What you're
12 seeing primarily, there's a couple of facilities
13 here that still have to go down. 324 for example
14 which is going to be daunting because of high
15 radiation levels but most of what you see here are
16 facilities or facilities that will be left for the
17 ongoing mission of the national lab. If you look at
18 this flat area here that looks like everything has
19 been taken off and remediated, that's what it looked
20 like not too long ago.

21 So there's tremendous amount of progress
22 occurring in the 300 area that you can see in terms
23 of knocking down buildings, taking out facilities,
24 digging up the contaminated soil that's causing
25 issue to the ground. And when we made those

1 decisions back in the mid-90s, what we decided was
2 that we take the facility out and then we would, if
3 there was contamination in the facility, under the
4 facility, mostly burial grounds of the waste
5 disposal facilities were pipelines, we would start
6 digging where the contamination is instead of
7 spending ten years to go investigate something,
8 let's just start digging and dig the thing up. So
9 we saved a lot money doing that and also got it
10 cleaned up earlier that way. It's been very
11 effective for us but at some point in time you got
12 to tie all the loose ends together and that's really
13 what we're doing in the next couple of years with
14 these decisions is tying all the loose ends up and
15 making a comprehensive decision for the areas.

16 But in these we will start digging and if
17 the contamination goes as deep as 15 feet or the
18 facility goes as deep as 15 feet, we'll take it to
19 15 feet below grade. Then we ask ourselves at that
20 point in time because 15 feet is the level that's
21 protective for human exposure, direct exposure in
22 the environment because we're going to backfill
23 clean stuff behind it.

24 So you got 15 feet of cover between
25 anything that's left in the ground. But what's left

1 in the ground you have to back up and say, "Will
2 that impact the underlying groundwater?" So we do
3 an analysis there and figure out what is the
4 concentration of the contaminant or contaminants
5 that rainwater would be able to take to the
6 groundwater and exceed drinking water standards. If
7 that's an issue we dig deeper or if the waste
8 facility is deeper, we dig deeper. We've gone
9 massive in some of these areas, deeper than 80 feet
10 if they look like surface mines in some of them.
11 Not so much here in the 300 area but for chromium in
12 the 100 area, we've done that.

13 There are some challenges and here's an
14 example of going more than 15 feet. This little guy
15 here, that's probably six-foot tall man to put it in
16 perspective, so that's six feet. This is the 340
17 vault. This received very high level of radiation in
18 there. There's a little bit of contamination
19 underneath of it so we're trying to figure out what
20 to do to get under than and we think we're going to
21 even use some of the sequestration we're going to do
22 that. This is the good sequestration, by the way,
23 you come up with sequestration.

24 So we have some challenges out of there.
25 The majority of the challenges are really the high

1 radiation sources that are left. You know, we
2 calculate -- we've done this tremendous amount of
3 cleanup, but in the 300 area we've got a couple
4 really big challenges to do. That's at 618-10
5 burial ground which is under going remediation now.
6 618-11 which is right next to the Energy Northwest
7 office buildings so we're trying to figure out how
8 to do that safely and still stay protective of our
9 neighbors and their license with the NRC, and
10 there's 340 vault and soils below the 324 building
11 which they have hot cells that leak, that underneath
12 the hot cell is a lethal radiation dose of fission
13 products. You can't put a person in there so we
14 have to do that remotely. Bring it up through the
15 hot cell, seal it off and then move it off. So it's
16 going to be daunting but progress. We've done a
17 lot.

18 This is nearly a million tons of
19 contaminated soil and debris has been excavated and
20 disposed of, a million tons of contaminated soil and
21 debris. That's a lot. Just from the 300 area. 38
22 tons of suspected transuranic waste has removed and
23 has been brought up to the central complex for final
24 disposition that meets the criteria for going to the
25 WIPP site down in New Mexico. That's where the

1 transuranic goes and when we signed this decision,
2 we believe that all but 34 of the 130 waste sites
3 will have been remediated. Now, we did that
4 remediation under a record of decision for interim
5 action in the 90s but we went back and looked at
6 every one of those because some of the laws have
7 changed to make sure that those actions are still
8 protective. So this decision will cover even the
9 work that we did before. We did an analysis,
10 checked it all out, make sure that it would still
11 meet today's requirements.

12 Another daunting part is what I love to do
13 is groundwater cleanup. And what we have is about a
14 half of a square kilometer of uranium contaminated
15 groundwater any one time underneath the 300 area.
16 And it's generally, it can go -- individual wells
17 can go up to like five times the drinking water
18 standard, but in general if you draw plumes -- we
19 have 30 is the drinking water standard, this is
20 micrograms per liter. So 30, 60 and 90, so where
21 you see this, this is 90 and you see it changes
22 dramatically from high water to low water. High
23 water over here. The ground water comes up and
24 responds to the operation of the dams. Goes down
25 and then those plumes head towards the Columbia

1 River. This plume is a different animal. This
2 plume is a result of remediation activities that
3 occurred in this burial ground here because you have
4 to protect the workers, we're putting water on the
5 soil, wetting it down so it doesn't get up in the
6 air where they breath it and the water is driving
7 uranium down into the groundwater and that plume is
8 ephemeral which means it will decay away, it will
9 move away with time. But what's important is from
10 your perspective, of course, is that this uranium
11 plume does get to the Columbia River. And this is
12 what we're here to talk about tonight.

13 If that plume did not have a continuing
14 source, if it didn't go back up and recharge into
15 the soil, that plume would go away within ten years.
16 It's about one percent of what's remaining in the
17 total inventory that's left after we moved it out,
18 but because it goes up and grabs in that wet-dry
19 cycle, that's what we have to treat to make this go
20 away. So the source of that are these process
21 ponds. There's a north process pound, south process
22 pond and a process trench here. The vast majority of
23 uranium we feel is up in this little spot right up
24 in here. This stuff was all dug out to at least 15
25 feet, all three of these, and backfilled above it.

1 The backfill on all the waste that we've done so far
2 meets criteria for surface exposure. In other words,
3 the 15 feet of material that we put over top of
4 these waste sites, check with the contractor today,
5 their records show that it's all below the level of
6 contamination that would be acceptable for surface
7 use. So we've done good there.

8 So here's what we see as ground water
9 which is blue, goes up and down, you can see a
10 corresponding spike in the uranium. So what's
11 happening there is this -- I call it periodically
12 wet zone. There's about 30 percent of the uranium
13 inventory at any one time in here and maybe about
14 half that is immobile so about 15 percent, you know,
15 half of it is mobile. Up here there's probably
16 about 65 percent of it up here but what was mobile
17 up here we think a lot of that has moved down into
18 here or moved out into the groundwater. The amount
19 of uranium that's in the groundwater at any one time
20 is about half of what we lose to the Columbia River
21 in a year. So it is our goal, what we have to do is
22 fix this problem here.

23 So let's talk about the uranium that's
24 getting out and into our Columbia River. I call it
25 our Columbia River because I live there. About two

1 to eight percent of the total uranium loading in the
2 54 miles in Hanford Reach, comes from the 300 area.
3 Now what's surprising is the rest of it comes from
4 natural sources and irrigation returns. Irrigation
5 returns because the same mineral deposits that have
6 phosphate also contain uranium. So if look at the
7 mass that's coming from the 300 area, in any one
8 year it's about 100 to 150 kilograms per uranium for
9 the 300 area. What's in our groundwater is maybe
10 50-60 kilograms, so about twice what's in the
11 groundwater in a year gets in -- out to the river.
12 1600 kilograms which is ten times as much comes from
13 irrigation returns and down below the Yakima River
14 because it goes through so much farmland is 4,000
15 kilograms per year.

16 Even with that loading in the Columbia
17 River, the uranium concentrations in the Columbia
18 River downstream to the 300 area are all below
19 applicable risk standards for human health and the
20 environment. In the city of Richland where I get my
21 water has less than one picocurie per liter of
22 uranium in it. And there's no statistical
23 difference between upstream and downstream of
24 Hanford in terms of how much uranium is in the
25 river. And why is that? Because 115,000 cubic feet

1 per second goes by.

2 So groundwater cleanup is driven by three
3 factors: First we want to mitigate human health
4 from exposure or consumption of the contaminated
5 groundwater. In other words, if it's contaminated,
6 you don't want to expose people to it. So that
7 uranium plume is located in a core industrial zone
8 of the 300 area which the Department of Energy is
9 going to manage as a nuclear facility for as long --
10 for at least as long as we think it's going to take
11 the plume to cleanup. So we -- we're not going to
12 allow people to withdraw water from the plume so
13 there will be no direct exposure. There is an
14 existing alternative water supply that comes from
15 the city of Richland. Now, in terms of the
16 environment, that plume does go to the Columbia
17 River. It does. It upwells at the shoreline.
18 Where it upwells at the shoreline it comes up
19 through the gravel, it comes out and seeps along the
20 shore. You can see it. The level of exposure for
21 direct exposure is well within limits. Where we
22 don't meet exposure is the drinking water standard
23 and the drinking water standard is based on a daily
24 consumption of two liters per day everyday. Okay.
25 So what's coming up through the river substrate does

1 exceed levels of drinking water standards but it
2 does not exceed levels of environmental concern.

3 So what's driving the decision here to do
4 this is not that we're putting at risk people
5 downstream, although, we are putting uranium into
6 the river, what is driving our decision is that the
7 law requires restoration of the aquifer to drinking
8 water standards and that's what we're going to try
9 to do within a time frame that's acceptable
10 considering the conditions of the site. So we
11 looked at alternatives. We looked at over 30
12 technologies, everything out there from soup to
13 nuts, from pump-and-treat systems to digging it up
14 to dig some of it up to biological treatment
15 facilities to barrier walls to everything you can
16 imagine. And we came up with a series of
17 alternatives of what can be done out there and we'll
18 talk about those. But within all the alternatives
19 that are on the table, there's a common set of
20 elements that we're going to do regardless of which
21 alternative we pick.

22 First of all, we're going to continue with
23 the remove, treat and dispose that we started back
24 in the interim records of decision and it has been
25 very, very effective in surface cleanup. So we're

1 going to meet those commitments. We're going to dig
2 up all the burial grounds. We're going to dig up
3 the contaminated soil as per the interim records of
4 decision. And we're looking at the new -- how those
5 have evolved and we're setting some new soil cleanup
6 levels because of the evolution. We have to do
7 groundwater monitoring until we're sure of the
8 attenuation of the uranium and also we're going to
9 monitor the nitrate and any other contaminant out
10 there. There is a process called Monitored Natural
11 Attenuation. That is if a contaminant can degrade
12 to something less toxic or less mobile and the plume
13 is relatively stable or shrinking and it doesn't
14 pose a risk, the requirements under the law say that
15 if that does happens within a reasonable time frame
16 you can do what's called Monitored Natural
17 Attenuation. We have tritium plume, it's about two
18 million picocuries per liter, it's out by the 618-11
19 burial ground. It will decay away within a
20 reasonable period of time because every 12.8 years,
21 half of the activity goes away. So in -- 13 times 3
22 -- 40 years, 90 percent of it goes away. And it
23 continues along that path and then also those
24 organic chemicals is vestiges of what was probably a
25 big problem at one time back during operations,

1 those vestiges of organic chemicals there's evidence
2 that those are decaying away in place by biological
3 processes. We're going to allow that to go on
4 because it's frankly incredibly difficult to do any
5 treatment in any formation that that's type and it's
6 not moving and the biological processes are working.
7 We will need institutional controls to control
8 access to the groundwater. And we'll need
9 institutional controls during the remediation
10 process.

11 So we've developed six alternatives for
12 consideration. They run the gamut from first
13 alternative is drop the wrench, walk away, don't
14 look back. It's called no action. You don't even
15 monitor. No one is going to consider that. Have to
16 do it by law. It's off the table in reality.

17 Alternative two is the groundwater
18 monitoring, in other words, we think it's going to
19 go away on its own within a reasonable amount of
20 time, yet we're still going to continue to source
21 stop, but let's just monitor the groundwater and we
22 think it will go away with time. That could work
23 but it's going to take a fair amount of time and
24 that amount time has some uncertainty and it's based
25 on the behavior of the river. We think we can do

1 better.

2 Alternative three is what we call uranium
3 sequestration. There's a lot of uranium still there
4 and most of it is not mobile because it's in
5 chemical forms that doesn't dissolve. We want to
6 get some of that remainder that is mobile into a
7 form that doesn't dissolve. So to do that, if you
8 put phosphates in the solution, you precipitate out
9 mineral autunite and much more stable than the
10 carbonate form that it's currently in so if we could
11 get it to precipitate alt night in place it will
12 stay there and will not continue to hurt the
13 groundwater underneath that it currently is.

14 So we propose there to do two phases. One
15 small and one quite large to do this and we looked
16 at how much time it would save doing that. Then we
17 looked at what we call enhanced attenuation which is
18 the same thing but focusing down in the area where
19 we think the trouble spot is and we looked at the
20 investment and the ability for us to go do that hot
21 spot and how much time you would save with that and
22 it turned out in terms of an engineering analysis to
23 be more efficient, effective for us to do that. So
24 alternative 3A is what we're proposing and that's
25 enhanced attenuation. We're going to tie up what we

1 can in that periodically red zone in the hot spot
2 and then we're going to continue with the other
3 parts that are common.

4 Alternative four is uranium sequestration
5 with some deep focus digs and then alternative five
6 is basically this is the strip line option where you
7 go in and you dig up all of the uranium that's left
8 and quite frankly it's a massive dig. It's over a
9 billion dollars. Our concern on the dig process is
10 that you'll end up driving more uranium to the
11 groundwater in hence to the river than if you do
12 nothing, if you just do number two. So we didn't go
13 down that path. We went down with the
14 sequestration.

15 So for the preferred alternative 130 waste
16 sites, 38 don't require any additional action. RTD
17 we'll do 74 to industrial standards and 12 to
18 residential standards. Now, what does that mean?
19 In that core industrial zone, we're going to clean
20 that up at a level that support industrial use. Now
21 it doesn't mean you can't use the surface versus the
22 residential use. The major difference between the
23 two is irrigation. How much can you leave behind
24 and not have irrigation drive it down to the ground.
25 We don't think there's going to be irrigation there

1 to drive it. We think it has been industrial. It
2 is set up to be industrial. If we have an
3 industrial mission we think it will continue for
4 industrial for quite a long time.

5 Enhanced continuation for the uranium in
6 hot spot over here monitored natural attenuation for
7 tritium up in the 618-11 burial ground going up and
8 then monitoring to assure that all this works. And
9 then of course we have to go back periodically, at
10 least every five years to determine whether this
11 decision is still protective. If it's not
12 protective, then we have to come back and figure out
13 what we're going to do. Larry?

14 **MR. GADBOIS:** I'm Larry Gadbois. I work
15 for the EPA. EPA's job is to do regulatory
16 oversight of the 300 area. Department of Energy is
17 the owner-operator and responsible for the actual
18 cleanup. EPA makes sure that it's complying with
19 the environmental laws and is protective and the
20 sort of things you've been hearing about. EPA has
21 been working with Department of Energy throughout
22 this through the interim actions through developing
23 what we're proposing for the final action. And we're
24 on board with what we're proposing, but we're about
25 to get to the Q&A and then the comment and this is

1 your opportunity. You're hearing our perspective on
2 the cleanup and we put forward our best proposal
3 that we think makes sense and now we're going to
4 want to be hearing what you have to say and looking
5 forward to that. And again, public comment is
6 super, super important. We have a batch of people
7 that have been looking at this and we have input but
8 other people have other ideas and other input and
9 that's really the value of the public comment
10 opportunity. So I believe is going to go next and
11 let me turn it over to him. And then -- after a
12 couple more presentations, we're going to have a lot
13 of Q&A and this is your opportunity to talk about
14 any of this 300 area cleanup. I look forward to
15 that.

16 **MR. SERRES:** So I'll be quick. I'm only
17 going to read like 30 or 40 pages here to you guys.

18 So I'm Dan Serres with Columbia River
19 Keeper. Thank you to everyone who came out. Thanks
20 to Heart of America and Friends of the Columbia
21 River Gorge and Oregon PSR and all the other folks
22 who put the word out about this. We didn't have a
23 ton of time to inform people of this really
24 important hearing was happening so it's nice to see
25 a couple of those people here. 32 by Dirk's count

1 which is I guarantee accurate.

2 So I'll start out with the good news. We
3 support the removal, treat and dispose option for
4 the waste sites on the surface for which that
5 alternative has been selected. And now I'll move on
6 to parts that we have a different view than DOE and
7 EPA on whether monitoring natural attenuation is a
8 good plan B, a back-up plan for the uranium.

9 To be clear what's proposed in alternative
10 3A, it's a scaled back version of the cleanup that
11 was proposed in the original alternative three which
12 was going to put this phosphate solution in a much
13 larger area than they're currently proposing. So
14 essentially what they want to do is try to
15 infiltrate and inject this phosphate material into
16 the soil with the idea of as Mike described, turning
17 it into a more stable form so the uranium doesn't
18 get to the river and it doesn't get into the
19 groundwater.

20 We don't have any real problem with the
21 idea of trying to stabilize uranium, however, this
22 approach is relative untested. EPA and its response
23 to Hanford Advisory Board called it an innovative
24 approach, something that's worth looking at but
25 hasn't -- in the field test they've done, hasn't

1 been entirely, successful. They've had different
2 problems in terms of fluid being flushed quickly and
3 the infiltration not happening quite the way they'd
4 hoped. And again, this is the crux of the cleanup
5 plan. So our really basic comment, our basic
6 perspective on this is have a plan B in case this
7 doesn't work and plan B should not be natural
8 attenuation of uranium. We don't believe that
9 that's appropriate this close to the river with
10 these levels of uranium. And in fact, there's a
11 long history of natural attenuation being proposed
12 for this area at Hanford and I think you'll hear
13 folks commenting about that where in the early
14 2000s, this was proposed, the idea of monitoring
15 natural attenuation. Let uranium naturally seep
16 into the river thus reduce the levels in groundwater
17 and I think it's an idea that was not appropriate
18 then, not appropriate now.

19 So I encourage DOE and EPA to listen to
20 the public when they say that dig it up, find
21 another way to do this. Don't just let it go. The
22 other thing I thought was really interesting is
23 getting into the plan B and I'll be as quick as I
24 can here. But looking at if this phosphate
25 injection doesn't work and if this uranium doesn't

1 respond the way they hoped, and we certainly hope it
2 does, what is the back-up plan? What do they plan
3 to do then?

4 We've gotten a couple different answers.

5 One is monitored natural attenuation may not be
6 appropriate. EPA -- again that was a response that
7 was sent to the Hanford Advisory Board. I said,
8 well, we would go out with a new proposed plan and
9 it wouldn't necessarily -- we would be -- it would
10 be a new round of public comment. I certainly hope
11 that's the case but we really believe there needs to
12 be a plan B in place beforehand so that you don't
13 deploy this new approach, this phosphate approach,
14 this chemical experiment in the 300 area next to the
15 Columbia River and then find out that it doesn't
16 work without really having something in place that
17 will deal with it more directly. You know, to give
18 you a sense for why we think this is so important,
19 we were paddling down the Hanford Reach just a
20 couple weeks ago with several people in this room.
21 And so to imagine letting uranium continue to go out
22 in the river, that would be coming out in the river
23 right downstream from where we took out. I mean
24 that area you drive by as you go back to Richland so
25 you've got a very strong sense now for what it looks

1 like when those springs and seeps come into the
2 river and it's something that we don't -- our vision
3 for the river in that area is not industrial use.
4 The Hanford -- Columbia River Keeper, Heart of
5 American Northwest and many other groups have been
6 emphatic for years that unrestricted use is a
7 standard that should be applied for river corridor
8 cleanup. For the dozens and dozens or hundreds and
9 hundreds of years that are involved with this
10 uranium being right next to the river, uranium 238
11 has a half life of four billion years; is that
12 right? So monitored natural attenuation is not
13 really appropriate for something of that sort of
14 long lived risk.

15 Industrial use is not the standard and
16 when you pick the wrong end point you end up on the
17 wrong path to get there and so monitored natural
18 attenuation might make sense if you don't expect
19 anyone to ever drop a well there. We don't accept
20 that as the end point. We think that the Columbia
21 River and the river corridor deserve a higher
22 standard of cleanup. And we're not alone in that.
23 That's the consensus of you, of many, many groups
24 across the region and we've made that point over and
25 over to DOE and EPA so it's a little bit

1 disconcerting to see the backup plan, the plan B be
2 essentially let it go to the river. And again,
3 we're just talking about uranium. We're talking
4 about one of the contaminants in this very
5 contaminated area.

6 How are we? Am I at five already? Oh,
7 I'm over five? So I'm going wrap here by addressing
8 a couple things that were brought up and just say
9 everyone should get up here and you don't have to
10 give a super technical comment. You can ask
11 questions. What's really important is that EPA and
12 DOE understand your values and the importance that
13 keeping this uranium out of the river has to you.
14 It's not just uranium. It's things like technecium-
15 99, americium, and TCE, this vault organic compound
16 that's also right there at the site. The dust
17 suppression issue; DOE is a leader in cleanup. You
18 guys dig big holes all over and we don't necessarily
19 believe that there's no other alternative, there's
20 no other way to deal with dust than just dumping
21 water on it and letting that drive uranium into the
22 soil. So if you come to the point of deciding maybe
23 you need to dig more of it up, we really encourage
24 you to do a better job than you did with the 47:04
25 plan of laying out those other dust suppression

1 options, the basic problem being, if you're digging
2 a big hole and you need to suppress the dust, does
3 that just send more uranium down into the
4 groundwater? Well, if you look at the mining
5 industry they have all kinds of ways of suppressing
6 dust and we encourage you -- the post-plan is very
7 thin about why that's such a road block. I say, you
8 know, don't let dust make you throw your hands up in
9 the air.

10 The last issue is cost and the volume of
11 material. One thing that we see in this proposed
12 plan is a real gap in the range of how much they dig
13 up. We see alternative four that to be honest is
14 pretty big proposed plan. We know that 3A is a very
15 targeting application of this chemical in a three to
16 four acre area right near the process trench which
17 is where a lot of draining was. We kind of are
18 suggesting well, why not target this hot spot area,
19 go after it, go as deep as you need to go and get it
20 there. What we see in alternative four which is
21 supposed to be digging deeper digging on the vadose
22 zone which is the deep soil, you know, it's pretty
23 vague about exactly why the cost balloon so much.
24 What we're asking for is a very -- is a much more
25 nuanced description of how a focused RTD might be

1 appropriate.

2 So going forward we think you should test
3 the phosphate before proceeding. We think you need
4 to look at digging deeper in the soil. Provide more
5 of a range of alternatives for the project. Pick
6 the right end point. Industrial use is not the
7 appropriate end point and thanks to Gerry has done a
8 great job about getting the word out about the
9 particular issue using mock-up method D. I'll let
10 Gerry explain what that means. But using that no
11 more protective standard is going to be really
12 important. And finally, don't repeat the mistakes
13 of the past. It's odd, I'm sure, to have me, a
14 relative newcomer to the Hanford issue, looking
15 around this room and people who have been at this
16 for decades say that but it's also remarkable to
17 look back across the history and to see monitored
18 natural attenuation for the 300 area in Hanford come
19 up over and over, and here we are again with that as
20 the plan B for this huge, huge decision. This is
21 the first major cleanup final record of decision on
22 the river corridor. What happens here will be a
23 precedent setting for the rest of the river
24 corridor. That's why your presence here is so
25 important. What we let slide at this stage is

1 again, precedent setting for the rest of river
2 corridor. So with that I'll close. If you have any
3 hard questions, you go to Theresa our Hanford
4 coordinator. Thank you.

5 **MR. BOHRMANN:** Thank you, Dan, and River
6 Keeper for that.

7 We're a little bit behind schedule on our
8 agenda but obviously we want to get to those
9 questions. So let's start that now. We'll start
10 with 15 minutes and then take a time check because
11 we want to make sure we get all of the formal
12 comments in too. I think we have about a dozen
13 people signed up for formal comments. So Chuck, I
14 want to start with you. And I think we may not need
15 a mic. I guess we have only one handheld so --

16 **MR. THOMPSON:** I still have this.

17 **MR. BOHRMANN:** Okay. We will pass around
18 that.

19 **CHUCK:** I'm curious about this 618-11 and
20 also the 10 site, but more so the 618-11 site. I
21 didn't see any plume maps or any maps really very
22 much in the way of maps in the materials you had and
23 so I'm curious if you could describe that waste and
24 what it's source was and what it's doing right now
25 and what your plan is for dealing with it.

1 **MR. GADBOIS:** 618-11 and 618-10 are solid
2 waste burial grounds they're on pretty outlying,
3 pretty isolated sites except for 618-11 went in then
4 the Columbia Generator Station came along and put a
5 reactor right next to it. But it was dry that went
6 in in three different forms. We had open trenches
7 where waste containers were just dumped in; cans,
8 boxes, bags, wooden crates, were just dumped in an
9 open trench. The trenches were filled and then they
10 put dirt over the top. They weren't lined. They
11 didn't have any containment. It was just a hole in
12 the ground so they went in and put dirt on top. So
13 those were the trenches part of it. Then both of
14 these sites also have -- we call them vertical pipe
15 units which is essentially a culvert like you'd see
16 under the edge of a road two feet in diameter but
17 they dug a hole in the ground, put these things
18 vertically, open bottom, little concrete posts on
19 some of them but basically open bottom and then they
20 filled the dirt around them so they had this cavity
21 going straight down to the ground. And they took
22 extremely radioactive packages of waste coming out
23 of the laboratories in the 300 area and they put
24 them on a truck in a shielded can in a shielded cast
25 on the back of a truck and a driver and they drove

1 them out there, drove the truck right over these
2 vertical pipe units and had a remote mechanism to
3 drop it into the ground. So that's bad stuff.

4 Now, even worse than that at 618-11, they
5 build some caissons down to the ground which are
6 same concept but it's a concrete caste about six to
7 eight feet in diameter, maybe 10-12 feet tall down
8 in the ground. In that they put the worst of the
9 worst and in the tube coming up out of that they
10 hand an angle in it so that waste went down, would
11 tumble down and go through that and they didn't want
12 the radioactive material shining up through a hole.
13 So by going around the corner you don't get the
14 shine coming out the top.

15 Okay. So that sort of the waste history.
16 618-10 we've been in and we're digging out open
17 trenches and we're mostly done with that. We got a
18 ways more to go and that included a lot of 55 gallon
19 drums of waste and some smaller drums of waste. So
20 618-10 we're into, we're doing the trenches. Around
21 all the vertical pipe units at both of these burial
22 grounds, we've driven down a two-inch diameter empty
23 pipe around each of those all the way down and
24 passed them and put radiation sensors down to get a
25 sense of how much radiation we'll be dealing with.

1 Luckily it wasn't as bad as we thought. It's still
2 bad, but we thought it was a nightmare and now it's
3 just going to be a bad dream. But we're going to go
4 in -- the plan is to go into 618-10 and all of this
5 waste is going to be dug up and stuff that's
6 eligible for disposal on Hanford, that's where it
7 will go. If it's transuranic waste that's not
8 eligible, then it will be packaged up and shipped
9 and go down to New Mexico. On the caissons, same
10 thing. That waste is all slated to be dug up. Our
11 interim action records of decision said dig it up.
12 What we're proposing for our final action is still
13 dig it up so no change there.

14 Oh, the plumes. I didn't get to that
15 part. Okay. 618-10 in the process of dust
16 suppression water regenerated a small uranium plume
17 and it's moved pretty fast and it's disbursing
18 pretty fast. They've had some safety issues there.
19 They've been shut down for nine or ten months and
20 you can already see the plume that the origin of the
21 plume is disappearing. Groundwater moves very, very
22 fast there. 618-11 about 15 years about, there was
23 a surprise big, big, big spike of tritium which is
24 radioactive hydrogen. It was in the groundwater.
25 It got up to the measure of it was eight million

1 picocuries per liter. The drinking water standard
2 is 20,000. So this is a big number. But the
3 groundwater there doesn't move very quickly compared
4 to everything around it. And so, yes, it was in the
5 groundwater but it's moved very slowly. Department
6 of Energy has a number of wells there. It's right
7 next to a commercial power plant that has even more
8 wells. So it's been tracked pretty well. It has
9 slowly moved but it hasn't gone very far and we've
10 looked at it and it also has a 12 year half-life so
11 it keeps decaying and decaying. And it's going to
12 decay long before it gets to the Columbia River.
13 It'll move a little further but it's decaying away
14 and fading away.

15 **CHUCK:** So even though it's intensely
16 radioactive and still half of it is still a very
17 large amount 12 years half of eight million
18 picocurie per liter would be four million picocuries
19 per liter. You're still saying you believe that it
20 will not be hazardous by the time it gets to the
21 river?

22 **MR. GADBOIS:** Yeah. In fact, it will be -
23 - I think the model has like 20-some years, 29
24 years, something like that. Within about 20 years
25 it's decaying away as it spreads a little bit which

1 dilutes and within about 20-some years, we're at the
2 drinking water standard and it won't impact that
3 much further than it is now.

4 **CHUCK:** Have we got any other radioactive
5 sites from the 618-11 site?

6 **MR. GADBOIS:** I don't believe -- maybe
7 traces but nothing -- nothing anywhere towards the
8 standard kind of a risk issue.

9 **CHUCK:** When do you propose to finish
10 digging up that site.

11 **MR. GADBOIS:** That's largely budget.
12 That's kind of a budget issue. We're in 618-10 now.
13 We're working on that. You all know the federal
14 budget train wreck we're in the midst of but the
15 intent being progress through 10 and start the
16 vertical pipe units there and then go and do 618-11.
17 The trenches is more, you know, kind of direct.
18 We've done a lot of dig involved and then get into
19 the vertical pipe units and then the caissons.

20 **CHUCK:** Larry, there's still a milestone
21 on that that you're pursuing right?

22 **MR. GADBOIS:** Yeah. I think there's a
23 milestone of 2018 to be done. I don't know that
24 we'll make that milestone but it's on the books and
25 we're working towards that.

1 **CHUCK:** And that would include the 11 site
2 as well.

3 **MR. GADBOIS:** Yeah 618-10 and 11.

4 **CHUCK:** Does the 11 site actually go into
5 the Energy Northwest area? I've been told that'
6 it's actually underneath a parking lot at the Energy
7 Northwest site; is that correct.

8 **MR. GADBOIS:** The waste site itself, no.
9 But, you know, the tritium that was released we
10 believe it was released as a gas that diffused and
11 got into the groundwater and that's where we've been
12 measuring and that flows under the Energy Northwest
13 center.

14 **AUDIENCE MEMBER:** I would like to find out
15 more about this sequencing of the different areas of
16 cleanup. What I'm trying to figure out is how does
17 cleanup of 300 fit with all the other hundreds and
18 the 200 area. Will it be done concurrently or are
19 you going to do 300 and then switch or how is that
20 going to work?

21 **MR. THOMPSON:** The Department of Energy is
22 aggressively pursuing cleanup all along the river
23 corridor and the 54-mile Hanford Reach. With this
24 decision -- well, first of all there's records of
25 decision for interim action for all the area along

1 the river. It's all covered. All the waste sites
2 or liquid waste disposal sites, burial grounds,
3 those sorts of things, all have a decision that we
4 can continue working on under without any additional
5 decisions, without this let's gather up all the
6 pieces and parts and kind of tie a ribbon decision-
7 wise across everything.

8 So we will be continuing to work on high
9 priority things such as the chromium treats which to
10 me in my mind is one of the higher things along the
11 river. We're still going to be digging up waste
12 sites and that sort of thing. And we're still going
13 to be working on the 300 area. So given this
14 decision puts us in a position with we're then going
15 follow up with other records of decision, but work
16 is going to continue regardless of the schedule for
17 getting these decisions. The work -- the limiting
18 factor honestly on how fast it is is budget
19 allocation. So work in the 100 area will continue.
20 Work in 300 area will continue. The rate will be
21 based on budget.

22 **MR. CHARBENEAU:** I think we can say that
23 most of the river corridor will be complete by 2015
24 and there's only a limited number of projects that
25 won't be complete by 2015. The 324 building is got

1 a recent discovery of contamination under it. That
2 one is being delayed. It won't be done by 2015.
3 618-11 won't be done by 2018. The 100 end reactor
4 area -- you want to cover that?

5 **MR. DOWELL:** Yeah. So at the end of '15
6 now, we're trying to achieve the river corridor
7 completion, that's the 100 area they're talking to.
8 You asked the question how does it sequence with the
9 200 area. Now, we're talking tonight about the 300
10 area which is also along the river corridor. 300
11 area work that will remain in 2015 will be remainder
12 probably about a half year's work at 618-10, the
13 DPU's we talked about. That will also lay the
14 design work for 618-11 will start that year likely,
15 try and achieve it before 2018, the end of 2018.
16 That's the goal. And then 324 is a building that
17 remains, one facility that has the high rad
18 underneath it. The design for the starts this year,
19 2014. We'll have that 30 percent complete in 2015.
20 We're going to do that work from '16 to '18. So the
21 idea on 300 area alone is to have all that work
22 completed in '18.

23 Along the river corridor up towards 100K
24 area and all around horn, all of that work should be
25 mostly complete this year and the end of next year

1 with the exception of 100K where in the K-west
2 reactor we have a basin that has a sludge treatment
3 project that's ongoing now as well. So there's a
4 sludge treatment project that's being done to remove
5 sludge that's being held in a basin there. And it's
6 a serious event. We have to take the sludge out,
7 then we can remove the basin and there's about 100
8 facilities and waste sites left in the 100K area.
9 That work is scheduled to be completed before 2018
10 as well, subject to the budget that they're talking
11 about. We're on track for that if get roughly a
12 billion dollars a year of budget. The 200 area, the
13 projects we have completed in the 200 area the
14 plutonium finishing plan. That's the only project
15 that's active there barring the 200 west pump and
16 treat and the groundwater activities that are
17 ongoing that we consider to be kind of basic and
18 intended to continue its cleanup of the site. So if
19 you think about our snapshot today, there's five
20 major things we're working on. Groundwater pump and
21 treat systems and groundwater systems. The 300 area
22 and river corridor closure, so river corridor
23 contract pick ups of all the 100 areas and river
24 corridor. The sludge treatment project, the
25 plutonium finishing project, and then records of

1 decision like we're talking about tonight which is
2 paperwork, not remediation but those are the five
3 things we're focused on.

4 So from that standpoint, we're trying to
5 get the river corridor complete. Shrink to the
6 central plateau, shrink the footprint of the site
7 and the central plateau strategy to get down to 75
8 square miles in the central plateau outer inner area
9 into and hopefully into the inner area which is ten
10 square miles which is the heart of the beast. It's
11 where the plutonium finishing plant is. It's where
12 the tanks are it's where all the burial waste sites
13 are. It's where the large high activity plumes are
14 and that's the strategy is get off the river
15 corridor. Protect the river primarily and get off
16 the -- get all the sites complete there, shrink down
17 that central plateau. And that's basically how the
18 sequencing will work so we likely won't be doing
19 much past PFP and groundwater in the 200 area which
20 is the central plateau area past 2019. That's the
21 best we can say.

22 **AUDIENCE MEMBER:** I appreciate that. It
23 seems to be all in your head. It would be very
24 helpful to us if you could put maybe a one page with
25 just what you said.

1 **MR. DOWELL:** Okay. We'll take action on
2 that and let me also remind you --

3 **AUDIENCE MEMBER:** Then we can really --
4 I'd like to understand the context of the 300
5 cleanup within all the other things you're doing.
6 If you can prepare something like that it would be
7 really helpful.

8 **MR. DOWELL:** Tell you what, we'll take an
9 action tonight and send out a link -- Kim, I'd like
10 to send a link to the framework document. This is
11 something that DOE's prepared and it's a document
12 that does exactly that now. It's not an EPA
13 document or an Ecology document. They acknowledge
14 that we did it but it's not a concurrence document.
15 It's not a Tri-Party agreement document. It's our
16 strategic plan that I think is written very well
17 that all of you can read and understand.

18 **AUDIENCE MEMBER:** Is that the executive
19 summary?

20 **MR. DOWELL:** It's the executive summary.
21 In fact in Chapter 4 of that document is the central
22 plateau strategy in all ten pages. That's a lot of
23 detail in terms that I think you'll understand
24 because we designed it because we have people at our
25 Richland office that aren't on projects that don't

1 understand this at all. And it's written for
2 everyone to understand it in a simple way. We
3 realize that a lot of our document is too technical
4 to follow. This does a really good job of bringing
5 that down into a way that everyone can understand.
6 We'll send a link out on that. We'll give you an
7 electronic copy and I'll be happy to send you a hard
8 copy as well anybody that wants it.

9 **AUDIENCE MEMBER:** I'd just like to second
10 that. My initial reaction to this presentation is
11 the cleanup in the standard areas is going to happen
12 but I recognize that hard decisions have to be made
13 and not grasping the 300 area of context of the
14 various, you know, the cleanup makes hard it to
15 decide what to think about this.

16 **MR. DOWELL:** Yeah, I appreciate that
17 comment. I mean, that is -- I wish we could have a
18 way of transferring information eloquently enough
19 that you could understand the risk and the decisions
20 we have to make. It's not all about money. It's not
21 all about money but boy, there's a lot of pressure
22 with money right now. We really take the balance of
23 criteria seriously. That document will show you how
24 -- I think -- personally I think if we don't get the
25 money that we need, we're going to have to draw

1 these decisions out longer and tack those things
2 that have the highest risk to the environment to get
3 them out. That's what's going to be the reality.
4 Now, we are consent free and Tri-Party agreement
5 that allows the State of Washington to sue us for
6 that and take us to court on that. So we do have
7 consort with the State of Washington Ecology and EPA
8 in a Tri-Party agreement and make sure we're trying
9 to balance those risks with the money we do get that
10 we put it in the right place to do that. We don't
11 do it in a vacuum. We don't do it in a shrouded
12 room with black, you know, shades and dark glasses.
13 We're trying to be outreaching and transparent in
14 those decisions and I think Oregon, we're trying to
15 bring stateside, the formal side organize of what we
16 fund in Oregon ended that process so that we try and
17 be transparent with that as much a possibly.

18 **AUDIENCE MEMBER:** What's the source of the
19 uranium coming down Yakima River?

20 **MR. THOMPSON:** Primarily the source coming
21 down the Yakima River is from the fertilizer
22 application. Some of it is natural leeching of
23 uranium from soils and mineral deposits.

24 **MR. DOWELL:** But not Hanford.

25 **MR. THOMPSON:** Not Hanford.

1 **AUDIENCE MEMBER:** So you say the
2 fertilizer has uranium?

3 **MR. THOMPSON:** Yes. It does and that's
4 not just our opinion either. The Washington State
5 Department of Health and Department of Ecology put
6 out a joint document that comes to the same
7 conclusion that researchers at Pacific Northwest
8 National Laboratory did in terms of how much is
9 coming in at the irrigation return. Uranium is a
10 natural occurring metal and it happens to be
11 deposited in the same deposits that phosphate is
12 deposited. So your phosphate fertilizer is going to
13 have uranium in it.

14 **THE AUDIENCE:** One of the questions, the
15 ground waste that you're digging up and brining up
16 to the higher plateau, what happens to that?

17 **MR. THOMPSON:** Well, what happens as they
18 excavate it, it is put into a truck. That truck is
19 -- the waste is wrapped in plastic. It is hauled up
20 to what we call the environmental restoration
21 disposal facility. It's probably the biggest client
22 landfill there is and from there it's got the whole
23 chain system for catching anything during operations
24 and at the end we're going to recover over the end
25 of it and it gets deposited into there and

1 compacted.

2 As to the central part of the plateau,
3 we're trying to consolidate the waste as much as we
4 can from the outside to the inside. And there are
5 certain limits and criteria that it has to meet to
6 be able to go into there. And sometimes it has to
7 be treated or consolidated before it can go in so
8 that's where it goes is that environmental
9 restoration disposal facility.

10 **AUDIENCE MEMBER:** I just wanted to know if
11 you had all the money in the world would you be
12 choosing this alternative and do you really believe
13 genuinely that this alternative will solve the
14 problem and make it safe for everybody who uses the
15 river as well as the fish in the sea?

16 **MR. THOMPSON:** All the money in the world,
17 that's struck me for just a minute. I had visions
18 of a very fishing boat.

19 The decision to go there isn't primarily
20 driven by the expenditure of money. And I've got to
21 be very candid with you. I've been working on this
22 for decades. I was part of that original decision
23 that said -- and the reason why we went with
24 attenuation earlier was when we dug up the first
25 part of the trench we got a response that was very,

1 very positive. The numbers in the monitoring well
2 by it went down to below drinking water standards.
3 But then later as other groundwater came in it
4 rebounded back up. And then we discovered that
5 although the vast majority of the mass of the
6 uranium is really in the top couple of feet because
7 uranium really likes to bind into soil and a lot of
8 the uranium is also the particulate stuff that was
9 in the top part of the -- it got filtered out like a
10 coffee filter. The vast majority of the mass got
11 hauled away and we thought that that was the source
12 what got the groundwater. Rain water, snow melt
13 moving down through the system was going through
14 this really concentrated part and trickling down and
15 getting the groundwater. We were wrong. What we
16 found out it that it's actually the river moving up
17 and down and groundwater coming up into that zone
18 below what we've dug up. And that is just enough to
19 keep it a little bit above drinking water standards.
20 That's the new part of the conceptual model. That's
21 the part we didn't have way back when.

22 So as we develop this we looked long and
23 hard because obviously no action decision was not
24 going to be one that would be acceptable to my
25 regulator or to my stakeholders because we need to

1 find something other than just watch and see if it
2 will go away. Now, there is a finite amount of
3 uranium still left in the soil there. It's finite.
4 There's not going to be anymore and one percent of
5 remaining inventory at any one time is in the
6 groundwater. And that does move to the Columbia
7 River at levels below environmental or human health
8 concern when it gets in the river. But we need to
9 find a way to deal with uranium and not have
10 unwanted and undesirable side effects. We looked at
11 things that looked really promising like biological
12 treatment. The Department of Energy and others have
13 invested an incredible amount of money into
14 biological treatment. What they do is they get bugs
15 to live and then they cut them off and the oxygen
16 gets used up and if you take the oxygen out of the
17 water the uranium converts to another form and it
18 becomes immobile as long as the water doesn't have
19 any oxygen in it. But then when the oxygen comes
20 back, it becomes mobile again. So it looks like
21 you've done a really good job and you can walk away,
22 but somebody else then has to deal with it later.
23 So we didn't want to do that.

24 We looked at excavation technologies. The
25 issue with excavation technology is that you're

1 going to mobilize a lot of it and it's going to get
2 down into the groundwater probably more than if you
3 do nothing. So to me the thought of digging up
4 something and immobilizing it more than if we just
5 watched and spending a lot of money doing it -- it's
6 like putting it in a beaker and shaking it up.
7 You're going to immobilize a lot more by mucking
8 around in it than if you do nothing. Don't want to
9 do that. We looked at other technologies for
10 barriers for pump and treat and there were 30-some
11 technologies put on the table to look at. We've had
12 expert panels look at it. The regulators have
13 looked at it with us. We've been out in the open
14 with it. Quite frankly to me the best alternative
15 is the sequestration technology where if you can
16 bind it in place, make it stable, then it should
17 stay there at reasonable levels of what's going to
18 get into the groundwater and the groundwater will
19 return to drinking water standards.

20 **AUDIENCE MEMBER:** I wanted to ask, you
21 talk about the uranium that's coming from fertilizer
22 and uranium that's coming from other sources. This
23 must be different isotopes. There's not radioactive
24 fertilizer. So when you're talking about quantities,
25 don't you differentiate by isotope?

1 **MR. THOMPSON:** You can't -- the uranium in
2 the 300 area, the uranium that was built there was
3 uranium 238. It's the same uranium that's in
4 fertilizer, that's in the mountain, that's in soil
5 and that sort of thing. When you talk about the
6 enriched uranium, that's a different isotope and it
7 can be blended with it but the vast, vast majority
8 of what's out there is natural uranium that came
9 from the mills and it was -- came from the uranium
10 mills and then they formed it here into what needed
11 to be put into fuel rods to go out. So it's the
12 unradiated uranium so it's natural uranium with a
13 lot of enrichment in it.

14 **AUDIENCE MEMBER:** But in looking at the
15 drinking water standards the level is set very low
16 and in this chart that you show it never goes below
17 the drinking water standards and it's always
18 significantly above.

19 **MR. THOMPSON:** That's because of that
20 continuing source, that one well. That's the worst
21 well of all and I like to show that one because it
22 really tells a lot.

23 **AUDIENCE MEMBER:** So your just relying on
24 dilution from the river?

25 **MR. THOMPSON:** No. What we want to do is

1 the source term, we want to bind it. A good portion
2 of that source term is in a hot spot and leave it
3 there and yes, there will be some of it will
4 continue to attenuate with time. The model, if you
5 can believe the model, and there's all kind of
6 uncertainties around the model. Okay? Says that if
7 you just watch it, it will go away in 28 years. Do
8 I believe that in 28 years -- there's uncertainty in
9 the models especially with how much the river goes
10 up and down. So I've been telling my management
11 it's more like, you can rely on 40 years but we can
12 do better than that as Larry said in public
13 meetings, if take away that source term. If we take
14 away part of what's in the bank there that
15 withdrawal is going to be less. There will be less
16 of it available to get into the groundwater.

17 **MR. BOHRMANN:** This is a good time check.
18 We're getting into our formal comment period.
19 There's one woman on the end -- why don't we take
20 two more questions after that and then we'll -- and
21 the agency will stay a little bit afterwards to talk
22 to you and continue the conversation.

23 **AUDIENCE MEMBER:** I'm concerned about the
24 drinking water standard because for some I see 30 is
25 allowed and it's really 10. And then the other

1 thing that concerns me more -- well, I shouldn't
2 say, I don't know whether it's more but the
3 radiation standards for children. I'm a survivor of
4 thyroid cancer. Radiation is the main culprit. So
5 15 milligrams is way too high. It should be 2
6 milligram pers year for children and women. Women
7 have a unique susceptibility for thyroid cancer.
8 It was 9 out of 10 women when I had my thyroid
9 removed in 1992 and now because there's so many men
10 working in the nuclear power industry, their rate of
11 cancer has doubled so it's eight women and two men
12 in our yearly count of radiation. So I really think
13 that it needs to meet water standards for the states
14 and for the radiation and I don't see that in here
15 at all and I'm sickened by it.

16 **MR. GADBOIS:** A little more background.
17 Thank you for the comment.

18 Uranium is both toxic to kidneys and
19 liver. It acts as a toxic chemical. It's also
20 radioactive. The drinking water standard to deal
21 with the toxic part of it is the 30 part per
22 million, the 30 milligram per kilogram it might be
23 in your handouts. The radiation part of it, uranium
24 is alpha emitter. That's the kind of radiation it
25 gives off. And there's a drinking water standard

1 for that. It's four milligram a year and our
2 cleanup plan proposes to meet both of those
3 standards.

4 **AUDIENCE MEMBER:** I'm glad.

5 **MR. BOHRMANN:** Okay. One here and then
6 the last one over here.

7 **AUDIENCE MEMBER:** A couple quick
8 questions. One, I think I've heard you say a couple
9 times that the fluctuation of the water -- river
10 level is what's driving a lot of the uranium into
11 the water. Have changes in dam operations been
12 considered, and if not, why not?

13 My next question I don't understand the
14 use of the word "final" around this. Especially
15 when it seems like we're talking about an
16 experimental sequestration technology using
17 phosphates to bind. So what's the word final mean?
18 And one more question, will adherence to the
19 drinking water standard protect the wildlife.

20 **MR. THOMPSON:** Yes. As a matter of fact
21 the mock up B cleanup level for surface water is 778
22 micrograms per liter.

23 The word "final." I'll take credit for
24 that. In 1991, we developed what we call the
25 Hanford Track Strategy. We signed the agreement in

1 1989 and we hired some really, really good
2 contractors and we went down the standards and
3 pathway for investigations. What we found was that
4 after three years and four years of developing work
5 plans to go do the investigation, at the end we had
6 seven to ten years investigations before we could
7 come to a decision on what to do for cleanup. That
8 was entirely unfathomable to me and some others that
9 were involved at the time, people in the regulatory
10 agency also. So if you look at Hanford, we've been
11 studying Hanford for decades. We know where the
12 risk is. We know what the issues are. We know what
13 the sources of the contaminants are. Why do we need
14 ten years of investigations before we make a
15 decision? So we developed a process where we could
16 get to records of decision for interim action. Now
17 these are things where you know where problems are,
18 you can go after them, you can make a decision, but
19 you don't have to deal with every contaminant that's
20 out there as long as you're compatible with what you
21 think the end product is going to be. Go after the
22 heavy hitters. Go after what is causing the risk.
23 Go after what's contaminating the groundwater.

24 So we wrote a series of records of
25 decision for interim action and then to discriminate

1 within the par labs at Hanford and you wont' find
2 this anywhere else in the world. There's this
3 colloquialism in the final rod. There is no such
4 thing as a final rod. It's just something that we've
5 kind of fallen into as a colloquialism. It is a
6 record of decision. That record of decision is not
7 the end all. It has to be reviewed at least every
8 five years to the determine whether you're still
9 protected. If you're not protected, then you've got
10 to go back and do something else. So the final
11 record of decision, final rod, I apologize. That
12 probably came out of the implementation of this
13 strategy that was developed that I was a part of
14 back when. There is no such thing as a final rod and
15 I apologize for that.

16 **AUDIENCE MEMBER:** Is sequestration by
17 using phosphate injection doesn't work, you're going
18 to go back try something else?

19 **MR. GADBOIS:** Yeah, we have that down,
20 that's always part of the process. And again, what
21 we're proposing here, all of liquid waste sites were
22 in what we call an operable unit, a group 300 FF1.
23 And we had record of decision for that in the '90s
24 and that was quote, "final" rod. And in that we
25 made a decision well this residual uranium that we

1 talked about leaving behind would be protective of
2 groundwater.

3 Well, it wasn't. So we're doing an
4 amendment to that, quote, "final rod." So final is
5 never final. We continue to look at it. We have
6 monitoring requirements and the CERCLA process just
7 like we're proposing tonight is to re-open that
8 decision and change it and that's the nature of the
9 beast.

10 **MR. DOWELL:** Let me correct something too.
11 You said if that doesn't work you'll do something
12 different.

13 That will be caught in the five-year
14 review cycle and it will be evaluated whether the
15 remedy was effective or not. You won't know whether
16 the sequestration worked or not, you'll just know
17 based on the cleanup levels whether or not you're
18 reaching the PRGs that you assigned the remediation
19 roles. So he won't be able to assess -- he'll be
20 able to assess the effectiveness by the modeling,
21 what you expected to happen, but you'll assess the
22 effectiveness of the remedy, effectiveness to
23 protect human health and the environment by the
24 continuous monitoring on the five-year period. It
25 doesn't mean we might get a bigger deal or something

1 like that. If it's not working, we are popping
2 above those remediation roles, we have to do
3 something. We have to take action. Does that make
4 sense?

5 I do want leave you, hey, if the
6 sequestration field doesn't work, we got to do
7 something else. That's not necessarily the case.

8 **MR. GADBOIS:** And we didn't dwell on this
9 much but part of this phosphate is before we apply
10 it we're going to take a bunch of core samples,
11 surface all the way down to the groundwater. We're
12 going to characterize that uranium and measure it in
13 the laboratory. How much of this is leachable? So
14 we do that before we put any phosphate. Then we're
15 going to put our phosphate application. This is how
16 we're proposing to do it and then after we apply the
17 phosphate, then we take a bunch of cores after that
18 and we take those into the lab and see how effective
19 was it. How much did it bind up. Did we change the
20 uranium to make it less mobile which we believe is
21 the case but we want to verify that. So this isn't
22 just squirt it and call it good. We really, really
23 do, but before and after so we know how it
24 performed.

25 **AUDIENCE MEMBER:** And how about dam

1 operations?

2 **MR. THOMPSON:** As you're probably aware
3 the politics around operation of the dams is very
4 intense and to be quite honest the pumping of
5 uranium in the 300 area I believe if you put it into
6 the mix in terms of power production and fish and
7 navigation and everything else, I believe it would be
8 considered a very minor element in that equation, to
9 be honest.

10 **AUDIENCE MEMBER:** So the answer is, no, it
11 hasn't been considered.

12 **MR. THOMPSON:** It has not, no, because I
13 think it's dead on arrival.

14 **MR. GADBOIS:** We're aware of the issue.

15 **AUDIENCE MEMBER:** My question is just a
16 short one. Have you looked at ice? I just heard at
17 Fukushima they want to put an ice wall.

18 **MR. THOMPSON:** Yes, as a matter of fact,
19 we've looked at freeze walls a couple place in
20 Hanford and this is one place where it's very
21 evident it will not work. And the problem that we -
22 - or the challenge let me say is that the velocity
23 of the groundwater is so fast through there that you
24 would not be able to cool the groundwater fast
25 enough. In some places it's 50 feet a day. Put

1 that in perspective, one foot a day for groundwater
2 is pretty fast. So in the area where all the
3 groundwater tends to funnel out of the 300 area,
4 it's an open channel and the groundwater just
5 converges in there and goes through and because --
6 it's like trying to form ice with spigots running.
7 It can't be done. So we looked at it and it's
8 technologically impossible.

9 **MR. BOHRMANN:** Let's go ahead and start
10 our formal comment process here. We are just going
11 to go down the list in the order that you signed up.
12 We're not going to have you on the clock but to get
13 everybody in, it's 14 people signed up right now and
14 if you would keep your comments to two or three
15 minutes and then after we go through the list we'll
16 do a check in a and see if anyone else wants to
17 comment or maybe elaborate on their first comment.
18 So we'll start with Gerry Pollet the first one who
19 signed up.

20 One more thing. If you can make sure to
21 state your name for the record so we make sure we
22 can tie you to your appropriate comments then we can
23 more easily get it on the transcript.

24 **MR. POLLET:** For the record, State
25 representative Gerry Pollet, Director of Heart of

1 America Northwest. Thank you all for coming. This
2 really is an important thing and we're talking about
3 the cleanup of what I like to call the Southern
4 Gateway to the Hanford Reach National Monument. And
5 this really is the final decision. It will take
6 pulling teeth and flaying backs with whips to get a
7 different decision five years from now or ten years
8 from now if this decision doesn't work. So thank
9 you for coming tonight.

10 This is -- there are a set of pictures up
11 here on the screen showing the 300 area. The first
12 one is one of Columbia River Keepers kayakers going
13 down the river. Thank you River Keeper. And the
14 importance of this is to demonstrate, first off,
15 it's the southern gateway to the Hanford Reach
16 National Monument. It is a highly popular
17 recreation area. It is critical habitat both legal
18 sense critical habitat and critical habitat in a
19 very real natural sense for salmon. And it is
20 where expansion of residential use, recreational use
21 is already being applied coming up the river. Right
22 across river there are million-dollar homes that
23 weren't there ten years ago. A couple hundred yards
24 downstream there are beautiful new homes being
25 developed and I just took my intern out to tour the

1 area today at lunch hour and we saw two very
2 interesting things that he pointed out.

3 One, all the contractors who are building
4 new -- have new buildings right up to here all have
5 beautiful lawns and water fountains. This is going
6 to happen in the 300 area even if the Energy
7 Department claims that they can keep it to be a,
8 quote, "industrial use." Secondly, one of the more
9 fascinating things as we were driving from the main
10 road, we saw two watering trucks going down and
11 watering the roadways in the 300 area.

12 Think about this. You just heard the
13 Energy Department and EPA say, "Gosh, we don't want
14 to dig up more because as we dig up, we have to put
15 water on the waste sites and it drives uranium into
16 the groundwater. What are we doing everyday? Don't
17 we're going to have institutional controls and not
18 put water on the ground."

19 But they're putting water on the ground
20 every day. I couldn't think of anything more stupid
21 and I hope you will address it because it turns out
22 there area really good alternatives to putting water
23 on waste sites for dust suppression and it's dumb
24 idea and it's not necessary. Back here, this map
25 shows the groundwater plumes and essentially what

1 this plan is proposing is to leave thousand-plus
2 kilograms of uranium in the soil to be re-wetted
3 over and over and over again and continue flushing.
4 And sequestration is a nice experiment and there is
5 no reason why it can't be applied along with digging
6 up further and immobilizing where you're digging
7 further to counter the claim that digging up further
8 will somehow cause more contamination. We've heard
9 over and over again from Hanford officials for 30
10 years, cleanup causes contamination. It's the same
11 thing we keep hearing. It is not the truth.

12 Cleanup is cleanup. Doing nothing causes
13 contamination. Leaving a thousand kilograms or two
14 thousand kilograms of uranium in the soil will
15 continually re-contaminate the groundwater which
16 flows into critical habitat and the energy
17 departments has failed to do the legally required
18 consultation with National Marine Fishery Service
19 over the potential impact on that critical habitat.

20 A question was asked earlier tonight about
21 uranium toxicity and the cleanup levels being used.
22 Five years ago EPA issued a formal decision that for
23 toxicity of uranium we should be using a figure that
24 is ten micrograms per liter due to toxicity. When
25 you've calculated through for out State cleanup

1 standard and health and we're using 30 and that
2 means we have three times more contamination in the
3 soil. But it's not just three times because what
4 happens in the so-called industry cleanup standard
5 is that the Energy Department would leave between 3
6 and 500 times more contamination per kilogram of
7 soil than if they were cleaning up under what is
8 called our unrestricted future use scenario. And
9 unrestricted future use scenario means you clean it
10 up to be safe enough for what is a reasonably
11 foreseeable use of this area. Children will enter
12 it. People will use for recreation. Someone is
13 going to dig a sewer line deeper than 15 feet. How
14 many of you have had a sewer line dug at your home
15 and had to go deeper than 15 feet? I know I did it
16 and I live in Seattle. When you're digging a utility
17 line for a building, likely to go deep are than 15
18 feet and their plan does not take that into account.

19 What we need to be doing is saying this is
20 the southern gateway to the Hanford Reach National
21 Monument. Let's get this one right. Clean up
22 deeper. Don't leave a thousand kilograms of uranium
23 in the soil. Meet our State cleanup standards and by
24 doing that, we will be clean enough so that the 300
25 area is available for our grandchildren to use as we

1 know they will use it and it will be safe for them.
2 The industrial cleanup standard, make no mistake
3 about it, is based on it only being safe for an
4 adult worker 40 hours a week exposed there. That is
5 not my grandchild. That is not Mike Thompson's
6 grandchild. That is not the person using the area
7 for recreation and it is not the person who uses the
8 soil that got dug up in a big pile because they were
9 excavating a new building in 20 years.

10 So urge people to join us in commenting
11 that between two or 28 years is too long. We have
12 to clean up to the levels that are based on future
13 use that we can reasonable foresee. Not the
14 hypothetical claim of the Energy Department that
15 we're going to keep the area industrial when they've
16 already said we're taking down the fences. There
17 are not going to be industrial buildings in large
18 portions of this area where we are knocking down
19 buildings. Hm.

20 And thirdly, let's dig up deeper and let's
21 not apply water and that will allow us to dig up
22 deeper. Let's clean up the other chemicals and let's
23 be sensible about what the area is going to be used
24 for respecting that right along the shoreline there
25 are three tribes with treaty rights to live along

1 and fish and all of us may be using if for our
2 grandchildren. Thank you very much.

3 **MR. BOHRMANN:** Next is Chuck Johnson.

4 **MR. JOHNSON:** I'm Chuck Johnson and I'm
5 the Director of Joint Task Force for Nuclear Power
6 for Oregon and Washington Physicians for Social
7 Responsibility. Maybe I should stand up here. We
8 should all get in the habit of doing that.

9 Going to take this in a little bit
10 different -- or a lot different direction than Gerry
11 did with his excellent presentation, and talk a
12 little bit about sort of the elephant in the room.
13 If you were actually going to that site, the most
14 dramatic feature that you would see there would be
15 plumes of steam rising from cooling ponds of the
16 nuclear reactor out on the site. So I'm going to
17 talk about that a little bit. Oregon and Washington
18 Physicians for Social Responsibility believe that a
19 critical step to the remediation of area 300 is to -
20 - the 300 area is to shut down the nuclear reactor
21 that is presently operating on the over the 618-11
22 burial ground in area 300.

23 Number one: Earthquake risk is a potential
24 catastrophe. This nuclear reactor is called the
25 Columbia Generating Station and is a General

1 Electric Mark II, Welling Water Reactor of similar
2 design to the three reactors that melted down in
3 Japan and proved that the small containment and
4 flawed design cannot withstand an extended power
5 outage. A four reactor at Fukushima experienced
6 damage to its elevated spent fuel pool due to the
7 earthquake that proceeded the tsunami. This pool is
8 in danger of collapsing releasing even greater
9 amounts of radioactive material than was released in
10 the original series of nuclear accidents there. The
11 CGS has a similar elevated spent fuel pool.

12 Columbia reactor is designed to withstand ground
13 shaking of 1.25g. In 2007, the U.S. DOE determined
14 that the Hanford site could generate ground shaking
15 well over .8g. Concern over the new seismic
16 findings on the Hanford site, caused U.S. DOE to
17 shut down the construction of the waste treatment
18 plan in 2002. When they restarted construction,
19 they built the waste treatment plant to be 220
20 percent above the design criteria of the Columbia
21 Generating Station. Unfortunately, the U.S. DOE does
22 not have authority over the nuclear reactor and the
23 Nuclear Regulatory Commission has chosen not to
24 upgrade the seismic design of the reactor.

25 This means that the Columbia reactor is

1 not designed to withstand the earthquake to which it
2 could be subjected. An earthquake just in that fuel
3 pool in the reactor building could crack and drain
4 resulting in a fuel pool fire. There are 93 million
5 curies of long lived radio isotopes sitting in the
6 spent fuel pool. A fuel pool fire would contaminate
7 the 300 area and surrounding community at levels
8 higher than of the disasters in Chernobyl or
9 Fukushima or all of the atmospheric tests ever
10 conducted. It makes little sense to start cleaning
11 up an area that has such a high level of
12 radioactivity uncontained site on the same site with
13 the potential of creating such a disaster. This
14 catastrophe would not only re-contaminate the area
15 higher than present levels, but it would effectively
16 end any remediation work on the site. It would not
17 only end the remediation of the 300 area, but it
18 would make the entire area of the Hanford
19 Reservation uninhabitable, thus all work on the
20 Hanford site would be impaired severely.

21 This situation could lead to catastrophic
22 accidents in the K Basins and at the waste
23 encapsulation storage facility, WESF. Adding to the
24 extreme level of contamination of the site and the
25 Tri-Cities and the entire Pacific Northwest and our

1 Columbia River. This number one and most compelling
2 reason that Oregon and Washington PSR believe the it
3 is extremely important that we shut the Columbia
4 reactor as a first step of remediation of the 300
5 area. The second reason is the Columbia reactor is
6 producing a large amount of long-live radioactive
7 waste. The total amount of radioactive
8 contamination on the entire Hanford site excluding
9 the Columbia Generating Station has been estimated
10 to be anywhere from 374 million curies to 430
11 million curies. In the 30 years that CGS has been
12 running, it has produced about 150 million curies of
13 long-live radioactivity. 93 million curies is in
14 wet storage and 55.4 million curies is in dry store,
15 dry castes, with two million curies in the reactor
16 for itself.

17 Because the CGS was re-licensed in 2012,
18 it is scheduled to be operated for another 30 years.
19 This will result in a total amount of long-live
20 radioactive waste being produced of over 300 million
21 curies. This is getting close to the total amount
22 of radioactivity currently on the Hanford site
23 excluding the Columbia Generating Station. The
24 Columbia Generating Station is a waste-producing
25 machine and it its lifetime it will produce close to

1 the total amount of radioactive waste found on the
2 Hanford site, the most contaminated site in the
3 United States. The DOE is spending billions of
4 dollars with a company to clean up radioactive waste
5 at the Hanford site. The DOE now wants to clean up
6 the 300 area that is so contaminated that it
7 requires, quote, "remedial action due to the
8 unacceptable risk to human health and the
9 environment." And yet they lease their land to a
10 company that is producing radioactive waste daily.
11 This defies logic and is another compelling reason
12 we believe to shut the down reactor is a critical
13 step in the remediation of the 300 area.

14 And finally, worker safety. Oregon and
15 Washington PSR is concerned about the health of the
16 workers at the Columbia Generating Station. The
17 fact is it's an extremely contaminated waste site
18 such as 618-11 is adjacent to the parking lot of the
19 Columbia Generating Station means that workers go to
20 work everyday on a site that has been declared to
21 present an unacceptable risk to human health. Due
22 to the remediation process, the workers may be
23 subjected to increased levels of radioactivity due
24 to the re-suspension of radioactive particles in the
25 air. Thus we believe that a critical first step to

1 the remediation of the 300 area must be the shutdown
2 of the Columbia Generating Station in order to
3 protect worker's health. Thank you.

4 **MR. BOHRMANN:** Chris Gann? Is Chris still
5 here? Okay. Next on the list is Keith Harding
6 followed by Karen Harding.

7 **MR. HARDING:** Well, I was sitting there
8 just listening to the presentations. Mike, I
9 thought your presentation was very thorough but I
10 was listening for what I might come up with for a
11 question and then this fellow over here, is it J.D.?

12 **MR. DOWELL:** Yes.

13 **MR. HARDING:** J.D. Okay. I seem to have
14 heard contradictory comments. Like, I think I heard
15 you make a comment that you weren't so concerned
16 about the uranium moving into the Columbia River.
17 The main focus was on stopping it from moving down
18 into the groundwater. And then I think I heard you
19 say that that was an objective also to stop it from
20 the river and I think I heard Larry say that.

21 So what occurs to me is what's written on
22 paper and what gets said verbally can be two very
23 different things. So I want to suggest that you
24 really start thinking more globally. You know it
25 seems like I hear it getting narrowed down, you

1 know, this project here. When the reality of the
2 planet is the planet is getting more polluted every
3 day and every little bit adds to the pollution of
4 the biosphere that we all live in. I mean, this is
5 a cascade of information every single day so that we
6 need to do our best to truly clean up.

7 I seem to hear that old phrase dilution is
8 the solution to the pollution which we used back in
9 the sixties and that just doesn't work anymore. You
10 know, if a single guy poops out in the woods, that
11 environment is going to take care of one poop but if
12 seven billion humans start pooping, you know, we
13 need to treat it differently. So what I'm
14 suggesting to you DOE guys is to really start
15 thinking more globally. It's the entire plant that
16 we need to be seriously cleaning up and I want
17 federal EPA to be really be tough with DOE. Because
18 DOE does not have a good record. We've been
19 attending these meetings for over 20 years and heard
20 a lot of stuff go through here. They don't have a
21 good record and Washington State Department of
22 Ecology also, be tough of Department of Energy
23 federal. Got it? Thanks.

24 **MR. BOHRMANN:** Just a reminder to state
25 your name for the record.

1 **MS. HARDING:** Karen Harding, I live in Mt.
2 Hood. It's impressive to look at the pictures in
3 the back and see all the buildings that are gone and
4 one might actually be lulled into thinking we're
5 nearing the end of clean up except that most of it
6 is the stuff that's under ground is lethal. When
7 there's four billion year path life it's hard to
8 imagine having standards that we set up today have
9 any meaning at all to people that would be coming, I
10 don't know, even a couple hundred years from now. I
11 think Department of Ecology, I mean, what would
12 happen if the Department of Ecology held DOE to
13 standards that meet the Clean Water Act or standards
14 -- it seems like things get shifted around to just
15 match what's happening in the ground which matched
16 what's happening in the budget which we all know is
17 a toxic budget.

18 So Department of Ecology needs to hold to
19 standards that were agreed on for clean drinking
20 water. I can remember years where the monument was
21 kind of the idea, well, if it's a monument then no
22 one is really going to go there. And now we're
23 looking at the monument as being a highly inviting
24 place to go and we have not cleaned up along the
25 river. So digging down and cleaning it all up

1 instead of -- at least in the front part of it where
2 it's most toxic and moving that out. At the same
3 time trying experimental approach with the phosphate
4 sounds like better than doing it all phosphate and
5 waiting and seeing. It needs to be -- there needs
6 to be some multi-level approach. I don't know. I
7 feel like I'm stumbling around and bumbling because
8 I can barely grasp most of this, but I continue to
9 come because it seems like I don't want to live in a
10 radioactive part of the country. This place is too
11 special for that.

12 Shutting down the nuclear reactor sounds
13 like a terrific idea if we're going to be cleaning
14 waste. And so I don't want to hear that it's a
15 final record and that five years from now, well, we
16 made this precedent and so that's the way it's going
17 to be because the budget is flat. It's just -- it's
18 stupid. It's really not acceptable. Thank you.

19 **MR. BOHRMANN:** Dan Serres. He'll be here
20 in just a second. Dan will be followed by Jeff
21 Seers.

22 **MR. SERRES:** Sorry about that. I was
23 taking a phone call about a meeting tomorrow.

24 Many, many interesting ideas on the
25 Columbia River and this is one of the more

1 interesting ones. So I just want to follow up on a
2 couple things that I meant to say in my perspective
3 at the beginning. Now that it's formal public
4 comment it's probably the appropriate time.

5 First of all, I think Gerry really pointed
6 something out that I meant to say and Gerry totally
7 hit the nail on the head which is this idea of
8 putting phosphate down into the soil is a fairly
9 good idea as a mitigation strategy for keeping
10 uranium from moving if for instance, you decided to
11 move it rather than dig it up. And so the
12 combination of these ideas are just sort of
13 misaligned in the current proposal. And so if you
14 went out to the really hot spots of uranium, applied
15 phosphate around it might be a very effective way of
16 solving this problem of uranium moving.

17 So I'm just going to tick off a couple
18 extra things that you've heard me talk already. We
19 are -- we want to echo concerns that have already
20 been raised by staff members of two tribes, Nez
21 Perce and Yakima, about the end use of this area
22 along the river and we encourage Department of
23 Energy and EPA to take our concerns very seriously.
24 We -- there are treaty issues at stake here and I
25 think that it's very important that those comments

1 and concerns be weighed very, very heavily along
2 with the concerns that have been brought up by other
3 agencies. The river through the Hanford Reach and
4 below is burdened not just by uranium but by a range
5 of other contaminants and Department of Energy has
6 gone to great length to try to address one of those,
7 hexavalent chromium in the BC area. Which is
8 they've dug all the way to groundwater and in a very
9 large area and so I think there's a demonstration in
10 the river corridor, DOE knows how to dig a big hole
11 and I think that's something we should really look
12 at here because, you know, again what if this new
13 phosphate injection approach doesn't work.

14 I also want to say that EPA should use the
15 lower reference dose from, I think that it goes all
16 the way back to 2000, federal register notice that
17 would likely drop the standard as Gerry pointed out
18 from 30 micrograms per liter to ten. So what's
19 important about that is if you drop the cleanup
20 level from 30 to ten, that means that you're
21 compelled to go out and grab more out of the soil to
22 basically dig deeper, wider or maybe you can just go
23 back to alternative three, which was applying the
24 phosphate injection over a broader are, because
25 again, they went from 3 to 3A which was in effect

1 shrinking the area for the chemical treatment.

2 We encourage DOE and EPA to produce an
3 increased level of detail and description in
4 describing alternative four. And this is really
5 kind of the crux of the issue. You've heard me and
6 others say, look, dig deeper go after more. What we
7 don't have is the nuance we need to flush out the
8 range of options between alternative 3A and
9 alternative four which is really not well described.
10 If you read the proposed plan you don't know what
11 the acreage is. You don't know how deep they plan
12 to go and it makes it very, very difficult for
13 people to provide a comparison between these
14 alternatives which is a requirement both under
15 CERCLA and RPRO (phonetic).

16 This is an important one: Cleanup of
17 contaminants in the area need to be addressed
18 regardless of their source. So kind of like if you
19 buy it you own it. You know, this is your problem.
20 DOE's site needs to be viewed in a more holistic way
21 where contaminants -- let's say the nitrate coming
22 from agriculture from another area. If that plume
23 is in the 300 area, it needs to be part of the
24 overall approach to cleaning up the 300 area and
25 that goes for TCE nitrate, technetium-99. It

1 doesn't really matter where they come from if
2 they're there and I understand that the decision
3 about cleanup in 300 area may not rest on those
4 things but they have to be part of the assessment of
5 risk that's going on, and it might make you treat
6 other contaminants like uranium more seriously if
7 you're looking and anticipating these big plumes
8 coming from the central plateau in the long run.

9 Hanford Advisory Board gave, I think, very
10 cogent, clear advice on this proposal and one of the
11 issues that it identifies is the field test for the
12 application of the chemical treatment weren't
13 entirely successful and so I'd encourage you to go
14 back and look at those P&L studies of DOE and
15 consider is this -- are you really ready to hang
16 your hat on basically what was kind of a by-product,
17 in one case at least, trying to produce apatite in
18 the soil which is kind of a different approach, one
19 that you've abandoned I think with good reason. And
20 you sort of observed the creation of autunite and
21 while it's commendable to move forward with what EPA
22 has called an innovative approach, it may be very,
23 very premature and I think this is what HAP was
24 trying to convey and I agree with this is that to
25 rely on that entirely.

1 I want to also for the record say that we
2 urge DOE and EPA to consult with NOAA Fisheries and
3 U.S. Fish and Wildlife Service and National Marine
4 Fishing Service. I think NIS is part of NOAA
5 Fisheries. And I'll just end by saying that I'm
6 looking for you to publish more robust information
7 looking at some of these dust mitigation
8 alternatives. We were -- it was not too long ago
9 you guys said, look, if it doesn't work to dig it up
10 -- or if it doesn't work this phosphate injection,
11 we're going to make them dig it up and I think
12 that's the fallback position the public is looking
13 rather than any certain monitored natural
14 attenuation of this uranium. With that, I've now
15 taken about 25 minutes of all your time so I'll hand
16 -- thank you.

17 **MR. BOHRMANN:** Jeff Seers?

18 **MR. SEERS:** My name is Jeff Seers and I
19 live in Hood River making me a downstream. I'm a
20 big river user including enjoying eating fish on --
21 so I would like to see a lot more done on the
22 cleanup. But first I'd really like to thank
23 employees of DOE for taking on this difficult,
24 dangerous and probably extraordinarily frustrating
25 work so thank you for doing it.

1 Just confining myself to this 300 plan, I
2 don't think it's adequate on -- I think a lot more
3 could be done. I think you could working at a
4 higher standard and I'd like to see that happen. I
5 don't believe the -- I think the use of the word
6 attenuation is a misnomer. Dilution I don't think is
7 a solution to this problem and I'd like to see maybe
8 as Dan was saying more attention to alternative four
9 and maybe more than that. Thank you very much.

10 **MR. BOHRMANN:** Jorgen Hess.

11 **MR. HESS:** Thank you. Get close. It's
12 either Jorgen or Yorgen if you sprechen sie deutsch.

13 My background is land use planning and
14 land use advocacy and there is no way that you can
15 predict land use particularly keeping industrial
16 land industrial Just no way. And the best example
17 of that is Portland south park. I don't know how
18 many people knew when we lived in Portland 45 years
19 ago. It was a major industrial site. Look at it
20 today. It's beautiful. So please don't predict
21 that that land will be industrial. The land should
22 be safe for public use, recreation, shorelines,
23 especially wildlife. Regarding the binding with
24 phosphate it's just too experimental. I heard the
25 statement, "It should work."

1 I'm going to read a quote from previous
2 Secretary of Energy, Steven Chu. He told
3 Oregonian's Editorial Board early this year, he
4 said, "Facilities at Hanford were designed in some
5 instances on untested assumptions."

6 That's a pretty heavy statement and
7 probably honest and I hope we can do a couple things
8 with this area 300. One, if you want to try the
9 binding with phosphate, fine. But don't just do
10 that. Do some deep digging all the way down to the
11 lowest groundwater to make sure you're trying that
12 too. One thing I heard tonight from this gentleman
13 from the Physicians for Social Responsibility, thank
14 you for that comment. That's scary. I hadn't even
15 thought about nothing thought about that been
16 presented tonight. That's probably one of the
17 scariest things that I've heard tonight. And I
18 agree with the gentleman's comments that will be in
19 my written comments and we'll try to get that out to
20 a lot of other people from Hood River.

21 The record of decision I think is way too
22 piece mealed. My comment and question earlier was
23 about context. I think it's important for the
24 public and the administrators and the planners from
25 the agencies to look at the big picture. Define

1 where is this project in context with all the other
2 ones. The glass plant, the VIT plant, all of the
3 others. We need that to give you advice otherwise
4 we're just tunneling looking at 300 when what about
5 100N, what about the VIT plant, what about all these
6 others. So we really need that. I've asked that 20
7 years ago at the first meeting at the Columbia Gorge
8 Hotel, and we still haven't got it. What I'd like
9 to get is a simple -- not reference to a bunch of
10 EIS's that I used to write when I was in the
11 government, but a simple one or two page document
12 that says, "Here is how everything fits together.
13 And here's our prioritization." Then we can say,
14 "Okay. Don't mess around with 300, maybe you should
15 go with 100N or put your focus on the VIT plant or
16 maybe this is the most important. Unless we know
17 that it's hard for us to have the same expertise
18 that you do.

19 The final thing I'll say, 22 years is too
20 long. I'll be 94. That's a long, long time. So we
21 do need -- and that's something you're going to have
22 pass up through the budget process to congressional
23 folks. And again, thank you very much for coming.
24 Please come again to Hood River and thanks for the
25 hard work you do to try to solve this problem.

1 Thank you.

2 **MR. BOHRMANN:** Mamie Gunderson.

3 **MS. GUNDERSON:** Well, I thought I was
4 signing up to ask a question when I signed that so
5 this is very short and sweet. So we've been hearing
6 a lot about drinking water standards as a method of
7 deciding if the water is clean enough but I've been
8 wondering if fish contamination is used at all in
9 that decision. Because I went with Columbia River
10 Keeper on the Hanford paddle a couple weeks ago and
11 I saw a lot of people fishing. So I think that says
12 to me that that area calling it industrial is pretty
13 unrealistic. Like, a lot of people use it now. I
14 think that's only going to increase. So I think
15 there are a lot factors that we need it use in order
16 to define what's cleaned up and what's healthy, at
17 what point the river is healthy. And also I saw a
18 slide on Gerry's slides and there was a sentence
19 that said, "With this plan the Columbia is going to
20 take the fall for our choices and our decisions."
21 And I can't help but think if we continue on this
22 path to this end point with this plant that we're
23 probably going to take the fall with it. Thanks.

24 **MR. BOHRMANN:** Robby Lapp (ph).

25 **MS. LAPP:** I bring you flowers from

1 Fukushima. This was the best effort that the New
2 Yorker magazine could do on the about a week after
3 Fukushima. It's their cherry blossoms with were in
4 bloom. And if you know the hazardous radiation
5 symbol you'll recognize that these blossom petals
6 are made of that symbol.

7 The nuclear reactor should be shut down.
8 It's exactly like the one at Fukushima. It has
9 those fuel rods hanging right above the reactor.
10 The last -- when I was at my last hearing and I
11 asked about when was the last study done of the
12 quake, earthquake responsibility for, you know,
13 assessing it with newer tools that they did when
14 they plopped Hanford down where it was, that has not
15 been taken into account to the risk and I was glad
16 to hear that someone has done that study and knows
17 that it should be. My question is when are we going
18 to wake up? The nuclear power generated in this
19 country is a little more than what is used to dry
20 clothes in our dryers. And I grew up in a time when
21 we didn't have electric clothes dryers or gas
22 dryers. So I know that's possible. I would like
23 this river to be cleaned up to the standards that
24 everyone's grandchildren can play along its shore
25 and that the fish are safe for people to eat. And

1 that they're safe for pregnant woman and children.
2 So I ask you to clean up that shoreline to that
3 standard. We yet to make a sign that has lasted as
4 long as she who watches Lest we thing we have the
5 greatest lates technology that's newer so it's
6 better. You know, that hasn't worked for lots of
7 things, including nuclear energy. So I know it's a
8 challenge and the Fukushima prefecture, they markers
9 of where no one should build because in the year 700
10 there was a tsunami that came up to this height and
11 some of them were still in the ground. So I ask you
12 to look more than seven generations ahead because
13 we're not going to have the signage to tell people
14 it should only be an industrial site. It looks just
15 like the other river land and so it needs to be
16 cleaned up to the standard of what is required by
17 the law. Thank you for following the law in this
18 country.

19 **MR. BOHRMANN:** David Mihalick (ph). Sorry
20 about that.

21 **MR. MIHALICK:** Hi, I'm David Mihalick and
22 I just recently relocated to Hood River from Austin,
23 Texas. I moved here primarily because of the river
24 and then during one of the first Friday events, I
25 stumbled into the Friends And Keepers booths and

1 discovered there was a major issue on the Hanford
2 that really compromises part of my decision-making
3 process for moving here in the first place. So I
4 was fortunate enough to go down the river with the
5 Keepers the other day and kayak and we did a tour of
6 the B reactor and which was pretty overwhelming.

7 So everything that I'm going to say is
8 going to be reasonably redundant and repetitive to
9 what's been said already. I think that having
10 unrestricted use of the water is absolutely
11 important. I was taken aback a little bit by the
12 one through five plans where plan one was do nothing
13 but from my humble opinion, if the phosphate doesn't
14 work, we're reverting to plan one just as default.
15 It seems like we should have a plan B in place today
16 so that in the five year period we can go back and
17 be ready as opposed to having wait, you know,
18 several more years for other plans to come into
19 effect when more and more radiation is entering the
20 river streams. So that's really what we have to
21 stop. We have to stop the radiation from entering
22 the river streams. Digging more holes makes a lot
23 of sense. I have to say a year ago I didn't know
24 there was a word unrestricted plan or unrestricted,
25 but now that I do and I do also want to reiterate

1 you all have a really tough job, guys. I don't envy
2 y'all's position, but that's the responsibility of
3 the job taken. And I appreciate you all do it so
4 well. And I hope that you all take these comments
5 to heart and spend the money that's necessary to do
6 it right.

7 You all mentioned early on that you all
8 were lucky because you know 20 years ago you all
9 took dug some holes and cleaned some stuff up which
10 saved a whole lot of money. Probably in 20 years
11 you can have the hindsight of saying the same thing
12 today. If we would just dig the holes go into plan
13 four and do it right, it would be done and then we
14 wouldn't have to be jacking around with this
15 anymore. So that's all I've got. Thank you very
16 much.

17 **MR. BOHRMANN:** Shawna Flannigan.

18 **MS. FLANNIGAN:** I moved here in 1987 to
19 Hood River and I've lived here about ten years and
20 had three children, all born at Hood River Memorial
21 Hospital, and back during the '80s when I first came
22 to town, I met Gerald Pollet, you don't probably
23 don't remember me but I remember you. I went to
24 those early meetings and was really concerned. I've
25 worked -- or I volunteered for Columbia River United

1 which I'm not sure if they folded into Columbia
2 River Keepers, but it's been a long, long time that
3 I've been thinking about Hanford.

4 All my kids are grown up now. My youngest
5 is going to be 21 in September and I look at my
6 children -- actually, I have a grandchild now and
7 I'm really thinking of the future more than ever and
8 I feel really bad about Hanford what we did there in
9 the first place which I think people weren't
10 thinking of the future when the problem was created.
11 We were thinking of the present moment and maybe
12 beyond that we were thinking of profit. I'm not
13 really sure why we kept creating more waste for 40
14 more years after we already created the bomb and
15 then we had the cold war and it's just really
16 ridiculous what we did in the first place. It makes
17 me sad when I think about it which I do a lot
18 lately.

19 A couple weekends ago I went with River
20 Keepers down the river kayaked 20 miles and toured
21 the reactor and it all came up for me again what
22 happened back in the '80s and I want to get more
23 involved at this point and so I came tonight to this
24 meeting from Portland where I'm now living. And
25 today earlier, I was at this beautiful place Opal

1 Creek and the water is just so beautiful. If you
2 haven't been there, it's crystal clear. You can see
3 all the way to the bottom. You can see fish
4 swimming and I was thinking of the Columbia and my
5 wish for the Columbia that it could be as beautiful
6 or clean so that we can enjoy it. And we need to
7 think seven generations at least. We can't just
8 think about the present moment. We can't think
9 about the budget today. We really have to clean it
10 up. We can't keep making these stupid mistakes. We
11 have to take responsibility and so I know you guys
12 work really hard and I know it's really complicated.
13 I understand that after going to tour the reactor
14 and it's mind boggling. I just think we have to do
15 it though. We have to figure it out and I want the
16 high standards, high standards. Let's just do it.
17 Okay. Thank you.

18 **MR. BOHRMANN:** Beth Flake.

19 **MS. FLAKE:** Hi, I'm Beth Flake. I also
20 live in Hood River and I am not prepared to talk. I
21 thought I was doing a question but I'm an engineer
22 and I went on the River Keeper tour and went through
23 the reactor and I was so impressed with all the
24 precaution that were taken to develop plutonium.
25 All the safety factors, all the different things

1 that they did to be careful. But then as soon as
2 they created it, they just dumped it. So all the
3 aforethought went into the creation of it and no
4 thought at all was given to the life of it, what was
5 going to happen afterwards. And I don't understand
6 that. That doesn't make any sense to me but it does
7 seem like it continued for years and years even when
8 we realized what we were doing was dangerous. We
9 kept doing it and I just hope that we can take a
10 different approach now. That we've learned from our
11 mistakes and we can do something better. So I
12 appreciate, again, the difficulty of your jobs and
13 the longevity, how long you've been there doing
14 this, but I hope that you'll go to the highest
15 standard and take the most precautions possible and
16 not just go for the easy solution. Thank you.

17 **MR. BOHRMANN:** The last person we have
18 officially signed up is Peter Corneleson (ph).

19 **MR. CORNELESON:** Thank you. My name is
20 Peter Corneleson. I live in Hood River and I would
21 like to ask that you follow the Washington State
22 Cleanup Law while doing this cleanup, the MTCA. I'd
23 like to know who we should appeal to shut down this
24 Columbia Generating Reactor. It seems just insane
25 that it was just re-licensed. Is it Department of

1 Energy or --

2 Energy Northwest. It's the federal
3 agencies that do the regulatory on that.

4 **MR. CORNELESON:** So it would be those
5 people that we would comment to or is a comment
6 going to make any difference at this point?

7 **MR. DOWELL:** This comment is for the 300
8 area cleanup. We'll take the comment and provide
9 where it is -- which one will we do? It's a comment
10 about closure of Columbia Generating Station, it's
11 an NRC comment. We're not the NRC so -- we'll
12 either provide you with something or guide that
13 comment to the appropriate people.

14 **MR. CORNELESON:** Okay. I'll give you my
15 card. I mean, that is just insane. The comment or
16 the suggestion by Dan that area four or excuse me,
17 alternative four needs to be better documented is I
18 think very important. The follow up if the
19 phosphate solution doesn't work and I agree with the
20 statement that you should consult with NOAA
21 Fisheries. Thank you very much.

22 **MR. BOHRMANN:** Is there anyone else who
23 wishes to make comment?

24 **MS. ATKINS:** My name is Ara Atkins and I'm
25 also a Hood River resident and I want to agree with

1 all folks who are requesting that the cleanup is to
2 the highest possible standards. And the only thing
3 that I have to add that's different, because I
4 understand it's only a different comment that adds
5 any extra weight. If you keep hearing the same
6 comment from all of us it doesn't really make much
7 difference is my understanding.

8 But the one thing that I heard tonight
9 that hasn't been mentioned by anybody else was when,
10 I think it was you Mike, mentioned about you checked
11 with the contractor about some standard. And I just
12 wanted to put it out there that -- I mean, I have
13 heard that contractors have been fined for not
14 working to the standards specified by yourselves.
15 That you do follow up very closely with the
16 contractors, that they are accountable and that
17 you're not just relying on their word for measuring
18 standards. That's all I have. Thank you.

19 **MS. HESS:** I'm Susan Hess and I live here
20 Hood River and I wanted to add as other people have
21 said, I think you guys have a -- you know, Mike when
22 you say you've been doing this for 30 years. I
23 can't imagine how you keep going, but -- and I do
24 think I want to encourage you guys to keep going
25 because it is very tough. I guess my comment more

1 is more to us, those of us who are, you know, who
2 are not agency people that really what we're going
3 to have to make the difference is we're going to
4 have to talk Ron Wyden and we're going to have to
5 talk to Maria Campbell and we're going to have to
6 talk to all those people to say this is important.
7 You must set it up so I guess it's up to us to say
8 we've got to go to those town hall meetings. We've
9 got to write to them. We've got to make sure that -
10 - this is important. And so again, just to thank
11 you for that and I guess just a call for all of us
12 to do our job.

13 **MS. LABRIOLA:** All right. I'm Theresa
14 Labriola (ph). I'm a resident of Mosier and I also
15 moved here about a year ago and learned about
16 Hanford in the year and sometimes question my
17 decision to live downstream. Somebody said it's
18 just too beautiful of a place to let this happen to
19 and it is. It's paradise. That's why I chose to
20 live here but when I hear there's something new in
21 today's presentation that wasn't in the one in
22 Richland, and it's this comparison of uranium. That
23 there's uranium coming in the Yakima and there's
24 uranium coming from here. And as my mother used to
25 say, it doesn't matter if your friends go out and

1 drink, you shouldn't drink. I don't care if there's
2 uranium coming from the Yakima. I don't care if
3 there's uranium coming from anywhere else, you
4 shouldn't let it go in the river. That's your
5 responsibility.

6 And when you look 300 area, the other
7 thing I think of is one falling as we've got all
8 these different areas in Hanford and so we can't
9 just look at the 300 area and go well, it's only a
10 couple thousand more kilograms of uranium because
11 there's pollution all lining the river and if we
12 look at every little spot individually, it will
13 aggregate. There will be more than any of us -- and
14 more pollution than any of us want to go into the
15 river. And so it's hard for all of us who don't
16 work on Hanford every day and I've only worked on
17 Hanford for a year and not 30 years. To keep all
18 that in mind, how is this contributing -- how is the
19 300 area contributing with the 100 area contributing
20 with the 200 area contributing. How -- so just keep
21 in mind that we really rely on you to look at more
22 holistically and I -- I want that. I want you to
23 look at the site more holistically.

24 I will talk about uranium for a minute
25 only because there is also -- when I see your slide

1 on it your presentation showing that massive uranium
2 coming down the river not concentration I think is
3 what you were doing and that's not a relevant
4 comparison so I really was upset to see that slide
5 come in there for many, many reasons. I don't think
6 it's comparing apples to apples, and again, this is
7 Department of Energy's responsibility for this site
8 and we expect to basically to hold yourself up to
9 high standards that we hold you up to. Well, thank
10 you again for coming to Hood River and thanks
11 everyone from Hood River for coming out. I think
12 you can see it's really important to our community.
13 And we look forward to continuing to work with you
14 on it.

15 **MR. BOHRMANN:** So I think everybody that's
16 left has already commented just about. Is there
17 anyone else? Dirk.

18 **MR. DUNNING:** Mine is not actually a set
19 of comments. It's mostly just to say thank you to
20 everybody. As I said the beginning, I'm Dirk
21 Dunning with the State of Oregon Department of
22 Energy. We've got a group of five of us who work on
23 Hanford issues between us we now have 75 years of
24 experience on the Hanford site for we've been doing
25 this for awhile and I can't tell you how important

1 it is to have all of your thoughts and inputs
2 because it does affect what we do and what we think
3 and what we write in our comments which we will be
4 working on as well so thank you.

5 **MR. BOHRMANN:** Anybody else.

6 **MR. POLLET:** Gerry Pollet. I just want to
7 say for the record a number of people tonight have
8 talked about the importance of commenting on the
9 relative prioritization of one cleanup area versus
10 another and funding one project versus another. For
11 many years the Tri-Party agreement agencies came to
12 Hood River every year and had a public meeting on
13 relative cleanup priorities. They've abandoned that
14 and I think it's incumbent after listening tonight
15 that the agencies return to doing that every year.
16 It's been way too long and it's way too important.
17 Thanks.

18 **MR. BOHRMANN:** Okay. Just a last call.
19 Anyone else want to comment or elaborate on their
20 comment?

21 Just a related not to Gerry's last
22 comment, the agencies will be back here in Hood
23 River on October 17th for what we call a Hanford
24 State of the Site meeting. It will be right across
25 the parking lot at the Best Western here. So save

1 the date on that. Hope to see everybody back here.
2 More information will be and more details will be
3 coming out about that very soon.

4 **AUDIENCE MEMBER:** Can you email that out
5 right away so we can get the word out.

6 **MR. BOHRMANN:** Yeah. We will definitely
7 send that email to the listserve. It will be on our
8 social media sites. It'll be on our websites so
9 that date is locked in, though, October 17th, here
10 in Hood River.

11 One more thing I forget to mention in the
12 beginning when you came in there was an evaluation
13 sheet you might have grabbed. We do value your
14 input about how these meetings are conducted. We're
15 very interested to get your thoughts on how it went,
16 how we could improve and what you liked about it,
17 where we might do something different. So if you
18 have filled that out or could fill that out real
19 quick, that would be great and just go ahead and
20 leave it on the front table there.

21 I think that's a wrap and thanks again for
22 coming and agencies will stick around a little bit
23 if you guys have further questions and we can
24 continue the conversation so have a great night.

25 **(Whereupon, meeting concluded at 9:30 p.m.)**

CERTIFICATE

1
2
3 I, Kimberly R. McLain, do hereby certify that pursuant
4 to the Rules of Civil Procedure, the witness named
5 herein appeared before me at the time and place set
6 forth in the caption herein; that at the said time
7 and place, I reported in stenotype all testimony
8 adduced and other oral proceedings had in the
9 foregoing matter; and that the foregoing transcript
10 pages constitute a full, true and correct record of
11 such testimony adduced and oral proceeding had and
12 of the whole thereof.

13
14 IN WITNESS HEREOF, I have hereunto set my hand this
15 14th day of August, 2013.

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21 /S/ Kimberly R. McLain
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