TENNESSEE VALLEY AUTHORITY

U. S. ENVIRONMENTAL PROTECTION AGENCY

TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION

QUARTERLY PUBLIC MEETING

MAY 20, 2010

ROANE COUNTY HIGH SCHOOL

KINGSTON, TENNESSEE

PANEL:

STEVE MCCRACKEN, TVA

CRAIG ZELLER, EPA

CHUCK HEAD, TDEC

LEO FRANCENDESE, EPA

BRUCE ENGELBERT, FACILITATOR

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STEVE MCCRACKEN: Good evening, everybody. My name is Steve McCracken. I am the TVA general manager for the cleanup job in Kingston and I want to welcome you here tonight. I'd like to get a few of the formalities out of the way. On my right and my left are the emergency exits. In the back there's also an exit from the room in case of an emergency. The bathrooms are to my left.

Having said that, I would like to recognize a few people that are here tonight. One is Beth Hickman with Congressman Lincoln Davis's office. She's in the back. Hi, Beth. Mike Farmer who I saw just a moment ago. He's a Roane County executive and is certain -- there's Mike back here in the corner. He has certainly shown a great deal of interest in the work that we're doing.

I would also like to introduce Barbara Scott. I'm not sure where she is. She's our state person from TDEC on the site and I would invite you all to talk to her at your convenience after the meeting

1 or during a break. Next, finally, I'd like
2 to introduce Bruce Engelbert. He will be
3 the facilitator for the meeting tonight
4 after I am done making some comments and
5 after the EPA has made some comments.
6 In a moment I will turn the meeting
7 over to Craig Zeller from the EPA. He will
8 talk to you about the next phase of the
9 Kingston cleanup project that was announced
10 just two days ago and is the purpose of the
11 meeting tonight.
12 I hope that the presentation that
13 he will make and the discussion that will
14 follow will be useful to you. I want to
15 also encourage you to talk to the other
16 people that are here, the subject matter
17 experts from the EPA and the TVA and the
18 State at your convenience during the breaks
19 and after the meeting. They can, frankly,
20 answer questions far better than I can and
21 in a detail that would probably be very
22 useful to you.
23 Finally, I feel like I would be
24 remiss if I did not provide a quick update
25 of the work that's underway. Specifically

1 I think some of you know it is our intent
2 to reopen the Emory River again for
3 recreation use in only a matter of days.
4 We will have -- we have removed over 3
5 million cubic yards of ash from the river
6 and we will have shipped over half of the
7 -- of that material to a disposal site or a
8 disposal facility in Alabama. This
9 shipping will continue through the better
10 part of the year.
11 You know, I've been here for six
12 months. Many of the people that work at
13 the site have been here since this spill
14 occurred in December of 2008. And I have
15 to tell you that from my point of view the
16 work that has been done to get to the point
17 of reopening the river is impressive. It
18 is the result of a true partnership, I
19 think, between TVA and all our contractors
20 and it has been done under the watchful eye
21 and encouragement and support of the EPA
22 and the State.
23 Sevenson is our dredging contractor
24 and they have worked long hours under very
25 difficult conditions. I can tell you that

1 working on the river in the winter and in
2 the cold and in the rain is hard work.
3 MacTech has been here to -- is there, is on
4 the site to load the trains. Norfolk
5 Southern has safely kept the trains moving.
6 Phillips & Jordan has been on the other end
7 to receive the ash and place it into a
8 state of the art facility that they operate
9 in Perry County, Alabama. And, of course,
10 we appreciate the support of the leadership
11 and the people in Perry County as this work
12 continues.
13 All in all, it seems to me that
14 reopening the river in only a few days will
15 be the result of a Herculean effort, in my
16 opinion, of a lot of people and we
17 sincerely appreciate your patience and your
18 interest because it's of interest to all of
19 us to fix this spill that occurred on
20 December 22, 2008.
21 With that, I'd like to turn it over
22 to Craig Zeller. He's going to make some
23 comments and then we will move to the
24 facilitated question and answer part of the
25 meeting. Thank you.

CRAIG ZELLER: Good evening. Thanks for coming. I appreciate your interest in this project. As Steve mentioned, my name is Craig Zeller. I'm the EPA project manager out of Atlanta that's going to be taking over from Leo who is sitting out there. Leo is in charge of the Phase 1 project, which was the time critical dredging and removal from the river. I'm in charge of Phase 2, which is what we're going to talk about tonight, which is closure of the failed dredge cell and removal of the balance of the material that's in embayments and sloughs of the Watts Bar Reservoir.

Phase 3 that I'm also in charge of will be the third and final phase. It will be the comprehensive, I guess, risk assessment, comprehensive nature and determination of the coal ash that's remaining in the river at the completion of the time critical dredging activities.

So EPA first got involved -- I guess up here we were involved somewhat at the initial start, but the Superfund

1 program specifically got involved when the
2 order was signed by TVA back on May 11,
3 2009. As Steve mentioned, through the
4 efforts of literally hundreds of people
5 that are extremely dedicated, and I'm
6 proud to work with them, tireless hours,
7 weekends, we've accomplished a great deal
8 in just over a year.
9 As Steve mentioned, we've dragged
10 about 3.3 million cubic yards of ash out of
11 the river and about 2.2 million tons of
12 that has been disposed of in Perry County
13 in a safe manner. In nine days, on May 29,
14 we're going to be done dredging the river.
15 Barges and boats are coming out and the
16 river will be reopened for recreation as
17 well as navigation.
18 So my job is to really build upon
19 that momentum that's been accomplished, I
20 guess, in a little over 18 months and
21 really to create a seamless transition so
22 the ash keeps moving and that we can return
23 this cell and close it in a safe manner.
24 So with that, as Steve mentioned earlier,
25 we did after several public meetings like

1 this on May 18, Tuesday, we released the --
2 we evaluated -- just I guess a little quick
3 background.
4 On January 19 we did release the
5 EE/CA report that covers this phase of the
6 work. Again, this is for closure, this is
7 Phase 2, closure of the failed dredge cell
8 as well as removal of about 2.5 million
9 cubic yards that's left over after the time
10 critical dredging. We released the report
11 that talked about and proposed three
12 alternatives to deal with this material.
13 After request for public comment on the
14 extension period, we extended that comment
15 period for a total of 75 days.
16 Why we're here tonight, as you
17 heard, the dredging is about over, the
18 river is about open, so we want to create
19 this seamless transition and get the next
20 phase of work kind of Q'd up, T'd up and
21 ready to go. Everything -- the picture on
22 the right there, everything in the red just
23 kind of shows you the time critical
24 activity has been -- really been focused on
25 everything in the river.

1 Everything in blue is kind of
2 highlighting the failed dredge cell, the
3 ash pond, the lateral expansion as well as
4 material -- you'll hear me say many, many,
5 many times today and talk about sloughs and
6 embayments. This is the north embayment,
7 this is Swan Pond Circle Road. There's
8 about 760,000 cubic yards up here in the
9 north embayment. This is the Swan Pond
10 Embayment, all of this water.
11 When I say embayment, what is
12 that? It's a fancy 50-cent term for
13 shallow backwater of the Watts Bar
14 Reservoir. That means it's all very
15 shallow water throughout the U. S. and the
16 state before the spill occurred and our
17 goal is to restore those to pre-spill
18 conditions.
19 The objectives of this Phase 2
20 action are really five or six bullets up
21 there. The first three talk about
22 minimizing contact and minimizing exposure
23 with coal ash. The best way to do that is
24 to, you know, get it contained and get it
25 covered up. So the first three talk about

1 minimizing contact with the ash, minimizing
2 migration of ash further in the Emory River
3 and then also minimize any exposure, that's
4 not only to humans but also to the
5 ecological receptors that reside in this
6 area.
7 We want to restore the embayments,
8 the shallow backwaters of Watts Bar that
9 were impacted by the spill. We want to
10 restore those to pre-spill conditions. We
11 need to close the former dredge cell so
12 that it no longer receives plant ash from
13 the fossil plant and we want to safely
14 dispose of all the waste streams.
15 In talking about the three
16 alternatives that were evaluated and thrown
17 out there for public comment for 75 days,
18 the easiest way I know how to explain these
19 is what they have in common versus how they
20 differ. All three alternatives were
21 proposed for public comment. All three
22 of those restore the embayments to
23 pre-spill conditions so what it looked like
24 December 21, 2008, when we're done out
25 here, they're going to look like that

1 again, perhaps even better. They all three
2 involve closure of the failed dredge cell.
3 Again, permanent closure so that this cell
4 will no longer receive plant ash. It will
5 be there structurally safe for the
6 foreseeable future.
7 All three of these facilities or
8 all three of these options do rely on a
9 network of what we're calling enhanced
10 perimeter diking. The old system relied on
11 earthen berms and clay berms and ash berms
12 to hold back ash. The new system will
13 involve a series of soil cement columns,
14 with a 25 percent replacement ratio. In
15 other words, 25 percent of poured concrete
16 will be injected 60 to 70 feet below the
17 ground. It's a technology called deep soil
18 mixing. I'll talk more about that in the
19 future, here coming up.
20 How do they differ? They differ on
21 -- the first two alternatives you looked at
22 were off-site disposal options, the third
23 one was an on-site disposal option. They
24 differ on the final elevation of how the
25 cell is closed out. Some close it up as

1 high as 805. Some close it down as low as
2 ground surface, around 765 to 780 feet.
3 That's above sea level.
4 Just for a point of reference,
5 Watts Bar Reservoir runs from around 736
6 feet at winter pool to about 741 at high
7 pool. The elevation of Swan Pond Road is
8 about 765 feet above sea level. And the
9 height of the cell before it closed was
10 about 820.
11 They differ in the construction
12 traffic. Certainly the on-site options
13 don't have any trucks and trains running
14 off site, whereas the on-site options are
15 going to involve -- could involve trucks,
16 would involve trains.
17 They differ in how long it takes.
18 All the alternatives we rolled out there
19 range from three to five years to complete
20 the work. Lastly, they all differ in the
21 cost.
22 This is just a brief summary slide.
23 A lot of you have probably read the EE/CA.
24 This is just a brief summary slide of what
25 I've been saying of what the three remedies

1 were out there. Alternative 1 was kind of
2 a continuation of the time critical removal
3 action concept. It involved the excavation
4 of 2.8 million cubic yards. That material
5 under Alternative 1 would either involve
6 railing that material somewhere on the
7 order of 400 trains, I believe, and/or a
8 combination of train traffic as well as
9 truck traffic. It was 35,000 trucks to
10 potentially Chestnut Ridge Landfill outside
11 of Knoxville. It was the shorter duration
12 to complete. It was about 3.5 million
13 years. It was also kind of our mid range
14 in cost. It was around 440 million.
15 Alternative 2 which is our most
16 impressive alternative and also our most
17 costly and consequently also the longest to
18 complete. It involved an excavation of 6.8
19 million cubic yards. That would be 2.8
20 million from the embayments and sloughs,
21 the north embayment, Swan Pond embayment,
22 as well as scalping off 4 million cubic
23 yards off the top of the dredge cell that
24 failed. All right. So that's your 6.8.
25 That, too, was an off-site disposal

1 option. Over 900 trains headed to Perry
2 County potentially, as well as or 800
3 trains plus 35,000 trucks to Chestnut
4 Ridge. It's the longest one to complete,
5 five years, and also the most expensive at
6 720 million.
7 The third alternative, you see the
8 zero under off-site disposal under this
9 one. This is our on-site disposal option.
10 Close out the cell anywhere from between
11 790 to 805. So it's kind of the mid range
12 as far as the time to complete and the
13 results are the most cost effective to
14 complete at 270.
15 So after 75 days of public comment,
16 we took a look at the comments we received.
17 We received on the order 36 comments from
18 individuals as well as entities or groups
19 with interest in the matter. Individual
20 citizens received, the ones we received,
21 the majority seemed to get the idea that
22 this on-site disposal option was simply
23 putting it back where the material came
24 from. They seemed to understand that this
25 was perhaps the least impact on the rate

1 payers and the 9 million people in the
2 Valley that purchase TVA power. They seem
3 to support the on-site option.
4 We received a lengthy set of
5 comments from the Roane County Community
6 Advisory Group. They flat out rejected, I
7 guess, the three alternatives that were
8 retained in the EE/CA and proposed for
9 public comment. They did not support any
10 of those and wanted us to really, I guess
11 for lack of a better term, start over and
12 come back with a real alternative to
13 provide proper protection of human health
14 and the environment.
15 We also received comment from a
16 pretty active environmental group that we
17 have been dealing with for a while, not
18 just here at this project but also
19 nationally, known as The Environmental
20 Integrity Project. They are teamed up with
21 a group, The Sierra Club, here locally as
22 well as Earth First -- Earth Justice.
23 Excuse me. They appear to support kind of
24 a hybrid approach to what we had in the
25 EE/CA. They were looking for liners and

1 leachate collection systems which are --
2 you see the new landfills, Subtitle D
3 landfills have.
4 They also had -- a majority of the
5 comments they submitted, about 85 percent
6 of them, really had significant concerns
7 over this term called "environmental
8 justice" about shipping waste to other
9 communities and dealing with the problems
10 there. They seemed to be adamantly opposed
11 to that Perry County situation and urged us
12 to look for alternatives to the Arrowhead
13 Landfill.
14 I encourage you, if you are
15 interested in this, all the comments we
16 received are all in the response summary to
17 the action memo that was released two days
18 ago. It's in Appendix B of that. Every
19 individual comment that was received is in
20 there as well as TVA's response to those
21 comments. So if you don't like my summary
22 slide, please, I encourage you to take a
23 look for yourself.
24 So after we received the public
25 comments, reviewed the public comments,

1 took those into consideration, developed
2 responses to those, the criteria -- people
3 ask me what did you use. Besides public
4 comment to select the preferred
5 alternative, which I'll get to next, we
6 used these three primary criteria. It has
7 to be protective of human health and the
8 environment and it must comply with local,
9 state and federal laws that govern this
10 type of use, this type of action. So the
11 effectiveness piece is does it meet the
12 remedial action objectives that I talked
13 about earlier. All three alternatives did
14 meet the RAOs.
15 Does it comply with ARARS? That's
16 a fancy term for Applicable, Relevant and
17 Appropriate Requirements. All three
18 alternatives would comply with the laws and
19 regulations that are out there today.
20 Then probably one of the big ones
21 where a lot of the strengths and weaknesses
22 really started to separate themselves with
23 regard to the alternatives and we evaluated
24 them were the short- and the long-term
25 protection of human health and the

1 environment. Short-term protection really
2 gets down to transportation risks, you
3 know, the off-site shipments, hundreds of
4 trains, 35,000 trucks, what are those
5 short-term risks. Long-term risks, how
6 protective is the remedy in the long-term,
7 again, for protecting groundwater and
8 protecting the Emory River and protecting
9 human health and the environment.
10 The implementability gets down
11 really to a couple of things. How long
12 does it take? All three remedies range
13 from three to five years. Fairly similar.
14 It talks about, can you do it? Is it
15 something that is a proven technology or
16 are you looking at something here that's
17 innovative or experimental?
18 In this case, you know, this job is
19 big, just big in the sheer size. But the
20 technology is proven. I mean we've learned
21 over a year and a half of doing this that
22 we can excavate ash, we can haul ash, we
23 can dry ash, we can ship ash. So that
24 stuff has been proven. You know, it's very
25 implementable.

1 Probably the trickiest part about
2 this thing or, you know, the most robust
3 engineering piece of this is the foundation
4 treatment, you know, the perimeter
5 containment system I talked about and the
6 soil cement, soil dikes and how can we do
7 that. The soil cement -- the stabilization
8 technology we're talking about, the deep
9 soil mixing, has been around for decades.
10 It's been typically applied by geotechnical
11 engineers that are building materials on
12 weak or soft foundations. So the
13 foundation treatment, again, while it may
14 be a little more challenging, it has been
15 proven in the field during similar
16 applications.
17 The restoration piece is can we
18 take the former aquatic system and restore
19 it? Yeah. We've done that a lot. We've
20 done that in coastal estuaries and it's
21 been done here with Church Slough and
22 shortly with the Eastern embayment. So the
23 restoration piece is something very
24 manageable.
25 The last criteria that we look at,

1 of course, is cost. It's a net present
2 value cost. If you invest money up front,
3 invest it at a certain interest rate, how
4 much it would cost up front to pay for this
5 thing, as well as the upfront capital
6 costs, it also looks at the O & M costs.
7 The operation and maintenance costs on an
8 annual basis here for all three remedies
9 were essentially the same. It was $686,000
10 a year or roughly $700,000.
11 So after putting all those things
12 in the mixer, turning the crank, TVA
13 submitted us to an action memo, EPA and
14 TDEC reviewed that action memo, and on the
15 18th of this month, on Tuesday, we came out
16 with our preferred alternative which is
17 Alternative 3B which was the on-site
18 disposal option presented in the EE/CA.
19 Under Alternative 3, as I
20 mentioned, the big zero in the off-site
21 disposal. The big advantage of that, of
22 course, is that the potential risks
23 associated with the shipment off site of
24 2.8 million cubic yards of ash and, in
25 other instances, sometimes as much as 6.8,

they're all eliminated. It does contain and involve the most largest and most robust system for perimeter containment. They close it as a permitted landfill in about 4.1 years and after that point in time, it would no longer be receiving plant ash.

It is the most cost effective. Someone said the cheapest. Okay. But we would prefer to call it the cheap -- the most cost effective alternative out there. I would say at $270 million it's still not real cheap. Certainly the largest construction project I've been associated with in my 20 years at EPA.

What does it involve? I'm going to cover some of the major components of what's going to happen next. The first piece is really the infrastructure. We've got to get 760,000 cubic yards of ash, first of all, out of the north embayment or also known as Berkshire Slough. To do that, we've got to get it on dump trucks and we've got to get it into the on-site disposal cell.

The way we're going to do that is the first thing we're going to do is construct an underpass at the Swan Pond Circle Road, also known as grade separation. So the first thing you'll see if you've driven by that area is what we're calling a little bump-out road. There's going to be a little detour that goes just to the north of Swan Pond Circle Road. We're going to run traffic on that temporarily while we're building the underpass.

When the underpass is built, the local traffic will go up and over and articulated dump trucks will go under. The big advantage of that is that we're going to keep these big old trucks off the road. All right. So it's very safe that way.

Then a bunch of -- also infrastructure on site. We'll get existing haul roads on site. We need to connect the north embayment roads up with the on-site roads so we can get this material back on site, get it dried, get it stacked, and get this cell closed out.

The first thing we're going to do is start excavating then in Berkshire Slough, also known as north embayment. The work here is going to be slightly different than what Leo and Sevenson and the gang have been doing in getting the dredging work. Of course, in Phase 1 that was all in the water being conducted with about five hydraulic dredges. We believe the bulk of this work can be done with yellow iron, simply tracked excavators working on the shore, working on hard ground, bulldozers running down the middle of the embayment.

And once we get into the water table, it may be necessary to use a slightly different type of dredge. We won't likely be using hydraulic dredges because you need water to float a hydraulic dredge. We more likely will probably shift to maybe a mechanical type dredge, clam shells or something like that. But we may need -- and haven't quite got to that phase. It's kind of learn as you go. Once we get into that lower section in the water

1 table, that elevation 741, we may have to
2 go to something if the tract -- if the
3 mechanical stuff is not working. Of
4 course, then that's going to be taken back
5 on site, consolidated in the on-site cell,
6 dewatered and then put in the cell for
7 permanent closure.
8 A bit about the working platform.
9 The working platform. The goal here is
10 that what's different about this under the
11 old way? Well, under the old way of
12 stacking ash in the impoundment, it was wet
13 ash stacking. Okay. Well, wet ash
14 stacking is done here. All right. No more
15 of that. That was cited as a potential
16 cause of the failure back on December 22.
17 So the first thing that's going to
18 be put down once we get the ash over there
19 is we're going to put down this working
20 platform and that's so we can support heavy
21 equipment, but it's also to keep wet ash
22 wet and dry ash dry. It's a drainage layer
23 that consists of stone and geo-fabric that
24 kind of separates things. It breaks at
25 what's called capillary breaks so this ash

1 that's stacked doesn't continue to soak up
2 water and become wet and fluid on us.
3 Then that ash, once the platform is
4 constructed, we're going to roll out thin
5 layers of ash and compact it. First,
6 before we do that, we have to get it to the
7 optimum moisture content. The optimum
8 moisture content for stacking ash is around
9 25 percent plus or minus 4. So we have to
10 do that by stacking, drying, and
11 potentially adding lime, that type of
12 thing. There's a little cross section what
13 it will look like.
14 Here is a cross section of what
15 this perimeter containment system will look
16 like. Some people have called it a wall.
17 Well, it's really not a single line of
18 concrete columns. In fact, it's a wall
19 that's going to be arranged in kind of a
20 lattice work. This lattice work of columns
21 will be anywhere from 15 feet in width to
22 130 feet in width installed down to
23 bedrock, keyed into bedrock so this thing
24 doesn't slide.
25 It's a massive effort. It's over 3

1 miles of perimeter containment, 16,000
2 linear feet. It's going to require a
3 quarter million cubic yards of concrete and
4 12,000 8-foot diameter borings to bedrock.
5 So we're going to suck up probably the
6 greatest amount of capacity of deep soil
7 mixing technology that's available in the
8 country. But it's going to be quite a
9 robust structure.
10 You won't see most of this
11 structure. I've been quoted as saying it's
12 the Hoover Dam. The Hoover Dam sticks out
13 of the ground quite a ways. Most of this
14 subsurface reenforcement is going to be
15 below grade. Okay. Ground surface, it's
16 about -- we figure at ground surface down
17 there it's about 60 to 70 feet to bedrock.
18 So most of these soil cement columns you
19 won't even see. It will be below water.
20 After that water management is
21 going to be a key here. Berkshire Slough
22 has a bunch of natural springs in it.
23 We're going to have to continue to manage
24 water, settle that water so it doesn't
25 discharge turbidity and solids to the Emory

1 River while we're working. Those ditches
2 are going to be flip-flopped around quite a
3 bit. Right now we have an existing clean
4 water ditch and a dirty water ditch. Some
5 water from the north embayment is coming
6 down. We're going to have to move those
7 ditches around considerably.
8 We're going to continue to use BMPs
9 by keeping ash -- so we can try to keep
10 water off ash to the maximum extent
11 possible so we can eliminate any transport
12 to the river during the construction phase
13 here over four years.
14 Probably one of the last things
15 we're going to do is we're going to pull
16 Dike 2. It was a 14,000-foot -- 1400-foot
17 rock road that was put in really to contain
18 any further migration into the river.
19 That's the last little plug we'll pull out
20 and we'll also deal with our settling
21 basins at that time. 5.
22 We're going to restore -- this is a
23 picture here of what the gang has recently
24 completed on the eastern embayment. This
25 was done under time critical authority.

1 Water just went back into that about two or
2 three weeks ago. The big advantage of
3 working with ash and what we've learned is
4 it's easily discernible from a visual
5 standpoint. In other words, if you look,
6 ash is gray, native sediment is kind of on
7 the brown side. So it's very clear to our
8 excavator operators, they can tell by
9 visual and they can also tell by feel.
10 This stuff has a different feel to it on
11 the scoop.
12 So we're going to excavate the
13 native material, making sure we get all the
14 ash out of these embayments and sloughs.
15 Then we're going to restore the aquatic
16 habitat that was there pre-spill. It's
17 quite a mix of things. We had forest as
18 habitat for birds, we had this scrub shrub
19 stuff on the riparian habitat, and then we
20 had submerged, you know, aquatic
21 environment and wetland communities.
22 I've been told in forums like this
23 and in availability sessions that we've
24 been going to that this area, Swan Pond
25 Embayment, was probably the best place in

1 Watts Bar to collect -- you know, to catch
2 crappie. And it's our goal to restore that
3 fishery and make that something the
4 community can be proud of when we're done.
5 The species composition, the
6 grasses, the trees, the shrubs and stuff
7 that we plant and restore out there will
8 be based on what we know about the area,
9 what's native to the area, as well as
10 what's in surrounding reserve stations.
11 So we'll visit similar type habitat and
12 selected whatever -- the species that we
13 plant there will be similar to what's in
14 East Tennessee.
15 Okay. Grading and covering the
16 dredge cell. Again, we're going to grade
17 this thing up and start stacking dry ash
18 until it gets up to, I guess, 787. After
19 that, we're going to put 2 foot of clay on
20 top, which is going to be a very
21 impermeable clay. A 10 to the minus 7
22 centimeters per second. On top of the clay
23 goes 1 foot of soil to support vegetative
24 growth median. It's going to be then --
25 that grass will be grown, maintained --

1 maintained and make sure we don't have dust
2 blowing around and make sure we don't have
3 erosion on top of the cap.
4 That cap will serve to kind of
5 reduce infiltration. By putting the cap on
6 there, we're going to reduce infiltration
7 from 14 inches a year now. Down through
8 the cap it's going to reduce that to an
9 order of magnitude of 1.4.
10 Long-term monitoring. While the
11 remedy is going on, we're going to continue
12 the air monitoring that we've done since
13 we've been out here. We've got five or six
14 stations, continuous air monitoring and
15 that's going to continue. As long as this
16 job goes on, we're going to make sure that
17 our workers are adequately protected and
18 make sure the surrounding community is
19 protected from any potential fugitive dust
20 emissions.
21 We'll continue to monitor surface
22 water quality leaving the clean water
23 ditches and leaving the dirty water ditches
24 and making sure we have a good idea of the
25 quality of water that's leaving the work

1 site and discharging into the Emory River.
2 After the remedy is completed,
3 there's going to be a comprehensive,
4 long-term monitoring program. We'll talk
5 more about this here later. But there's
6 about 20 new additional wells going in out
7 there right now as part of the river system
8 EE-CA. Those wells are being screened at
9 all types of depth intervals, some shallow,
10 some intermediate, some depth -- or some
11 deep down on top of bedrock. We will
12 continue to monitor the groundwater quality
13 at this closed out cell for a long time.
14 Then, once we're kind of done with
15 the whole construction project, and it's
16 going to take about four years, we've heard
17 a lot of public comment from some mayors in
18 the area as well as citizens about, gee, it
19 sure would be nice, you know, we lost our
20 ball fields, they're now the ash stacking
21 area, sure would be nice to maybe look at
22 beneficiaries for this closed out cell.
23 While CERCLA can't require that, while my
24 program can't say, ye shall put a football
25 field or ye shall put a soccer field, that

is something that I know TVA is starting to think and they're trying to put together kind of a long-term land use plan for this area as well as a plan and it's something that we're going to keep in the back of our mind and try to address those concerns as we move forward.

Okay. This is kind of really the bullet points of why 3B. Well, the biggest thing I think really is it eliminates those potential, short-term risks. It eliminates the transportation risks of 35,000 trucks, potentially hundreds of trains from going someplace, maybe Perry County. It deals with disposal capacity issues of nearby landfills. Do they -- you know, some landfills might not have the capacity for 2.5 or 2.8 million cubic yards of ash.

It also kind of addresses some of the off-site acceptability issues. You heard EIP said, you know, they're going to have some real big problems with this disposal situation in Arrowhead. By going on site and dealing with our problems here in Roane County, we deal with the closure

1 of this ash responsibly and safely and we
2 manage it here long-term and monitor it
3 long-term and make sure it stays adequately
4 protected and we don't transfer this
5 potential problem to some other community
6 to deal with it there.
7 It does provide for safe
8 containment of ash. Okay. By installing
9 this rather robust engineering deep soil
10 mixing technology, it addresses the root
11 cause factors that people explained what
12 caused the failure in the first place. Put
13 simply, it was built on a bad foundation, a
14 soft foundation, it was stacked too high
15 and stacked too wet. Okay. By dry
16 stacking we eliminate the wet stacking
17 issue and by surrounding this thing with 25
18 percent soil cement columns -- I must
19 mention, it's been designed -- the soil
20 cement columns, I failed to talk about
21 earlier, has been designed to withstand a
22 local earthquake with a magnitude of 6.0
23 that happens about 36 kilometers from the
24 site. It's also being designed and
25 constructed to withstand an earthquake on

1 the New Madrid Fault of a 7.6 magnitude
2 quake that's over 400 kilometers from the
3 site. Those two earthquakes have a return
4 frequency, a return interval of 1 in every
5 2500 years, so that's a big quake for this
6 region.
7 A word about groundwater. I've got
8 some slides here about groundwater. It's
9 that private drinking water wells have been
10 sampled by TDEC immediately after the spill
11 and I think there was over 115, 116 some
12 private wells that were sampled by TDEC.
13 None of those wells have shown any MCL
14 exceedences. What I mean by an MCL is a
15 maximum contaminant level set by the Safe
16 Drinking Water Act. The private wells when
17 they've been sampled by TDEC have not shown
18 to have been impacted by this spill.
19 We have groundwater wells in the
20 cell, in the dredge cell, as well as
21 background reference wells that show that
22 metals are not readily leaching off this
23 ash. There's about 60 to 70 feet of ash
24 that's actually in the water table and I
25 have some groundwater slides to show.

1 Okay. Groundwater flow we know.
2 We're not debating the fact that we know
3 where it flows. It flows to the river. It
4 does not flow to drinking water wells, as
5 we've proven with our drinking and well
6 sampling in private well residences. We
7 have several wells here. It's probably
8 hard for you to see where you're at. But
9 when you're setting up a groundwater
10 monitoring network, it's important that
11 you establish what representative
12 background concentrations are, okay, so
13 you know what's representative of the area
14 that's not potentially impacted by some
15 waste zone.
16 So these are our background wells,
17 AD-1 and 16-A. They are just off -- off
18 the road right there next to Pine Ridge and
19 they are upgradient of the dredge cell.
20 After that we have some old wells that have
21 been in place since 2000 and some new wells
22 that were put in place when we started
23 stacking ash. These wells are right here.
24 There's 1, 2, 3, 4, 5, 6, all downgradient.
25 And we've been monitoring those

1 wells under the -- TDEC asked TVA to put in
2 those dredge cell wells back in 2000. We
3 put in three new wells in the ball field
4 back in April, May of '09 before we started
5 stacking ash in the ball field. The reason
6 being is we wanted to make sure that we
7 didn't adversely impact groundwater quality
8 as we were stacking 30 foot of ash in this
9 40-acre area of the dredge cell -- - or
10 excuse me -- the ball field.
11 We've been monitoring this for a
12 host or a suite of metals that are commonly
13 associated with coal ash and we've only had
14 -- in the background wells, okay, this is
15 the red line here is the arsenic drinking
16 water standard. So if you were drinking
17 water from these wells that are screened in
18 ash, the number that you need to be
19 concerned about is 10 parts per billion.
20 Okay. That's 10 red marbles in 1 million
21 white marbles. Okay. So that's a pretty
22 low concentration.
23 But you can see here since January
24 of 2000 the concentrations -- my pointer is
25 going out. The concentrations remained all

1 below the red line. Okay. This is for the
2 arsenic. Now, we've had -- of all the
3 metals that we've been analyzing for, we've
4 had one metal, arsenic. Only one metal
5 that has shown an exeedence of that 10
6 number since we've been monitoring. That's
7 these wells. Okay.
8 This well out here is actually on
9 Dike C. It's right off the stilling pond,
10 right on the banks of the Emory River.
11 It's screened in ash. All right. It is
12 actually monitoring the quality of pore
13 water in ash. We've had six exceedences in
14 that well since it's been monitored since
15 June 2000. It's important to note those
16 exceedences have ranged between 11 and
17 14 parts per billion. Okay. Slightly
18 above the drinking water standard.
19 The last seven events, that well
20 has shown concentrations below the 10
21 number. That's this stuff here. Now, the
22 other exeedence, the other well we had was
23 one of the new wells we put in the ball
24 field last spring, a well known as AD-2.
25 When we first put it in, it had a spike up

there at 30 parts per billion. We believe that was because it had some turbidity in the filter pack and we were getting relatively high TSS, or total suspended solids, in the readings. The next event it dropped below half of that and over the last seven months we've had no arsenic exceedences in that well.

So when you hear me say, quoted in the paper that the drinking water standards out here in that dredge cell meet drinking water standards, they do. The groundwater quality in that cell meets drinking water standards. So if you really felt compelled to drink water out of ash, the numbers for arsenic are below that 10 number. It's important to note that no one is drinking water from that cell now and it's important to note that no one will be drinking water from that cell in the future. When this cell is closed out, there will be deed restrictions, conservations placed on it to insure that nobody installs a drinking water well and irrigation well through the closed out cell.

1 People have asked, you know, why no
2 liner, why no leachate collection, why no
3 groundwater remediation component. All
4 right. My answer for that is that in order
5 -- I've looked at groundwater data sets for
6 EPA for over 20 years. If this groundwater
7 data set was just for a run-of-the-mill,
8 typical Superfund job in coastal low
9 country South Carolina or in the Piedmont
10 of North Carolina and I was looking at this
11 data, that data tells me monitor. Okay.
12 In order for there to be a
13 groundwater remediation component in the
14 Superfund remedy, one must have a
15 groundwater plume. Okay. We don't have a
16 groundwater plume here. Not now. But what
17 I want to emphasize is as we move forward,
18 there's going to be an enhanced network of
19 groundwater monitoring. We're going to
20 monitor that on the frequency that TDEC
21 requests per their rules. And EPA -- since
22 this is being closed out under a Superfund
23 site, EPA has a process in place that's
24 called five-year review process. So when
25 you close out a cell like this, the

1 statute, the Superfund statute requires me
2 to monitor this thing in perpetuity every
3 five years.
4 Now, this five-year review process
5 has gotten to be a big part of our
6 workload. As we go through the 1200, 1300
7 NPL sites in the country, a good chunk of
8 those have now gotten through the
9 construction completion process. We do a
10 lot of five-year reviews on an annual
11 basis. I think in Region 4 alone we do
12 close to 100 of these a year. And tweaking
13 Superfund remedies is something that we do
14 often. Optimizing Superfund groundwater
15 remedies is something we do often.
16 If our selected groundwater remedy,
17 whether it be pump and treat in situ
18 chemical oxidation, if it shows over a
19 period of time over the first five-year
20 review or the second five-year review that
21 it's not working, we optimize it, we
22 maximize it, we fix it.
23 We're going to do the same thing
24 here. This job is no different. As we
25 move forward with the monitoring of this

1 closed out cell, if it shows that all of a
2 sudden we have a groundwater plume that's
3 discharging unacceptable concentrations to
4 the Emory River, you have our word we're
5 going to fix it. Just because -- you know,
6 some people say, well, Craig, you're going
7 to go home, you're going to dispose of this
8 ash on site and then go back to Atlanta.
9 Craig is going to be up here for four years
10 and probably ten years after that.
11 When we close this thing out, just
12 because we close it out, we cap it with 2
13 foot of clay and put grass on it does not
14 mean we're done. You know, the last piece
15 is monitoring and we do that forever.
16 Forever is a long time, but that's how long
17 -- you know, we talked about 30 years of
18 monitoring. That's how long we're going to
19 do it up here.
20 So you have our commitment that if
21 all of a sudden I create an arsenic
22 generating machine out there by closing
23 this cell out and it's discharging
24 unacceptable concentrations into the river,
25 we'll do something about it.

1 A lot of people have asked me,
2 Craig, how is this consistent with the coal
3 ash regs? My agency on May 4 did propose a
4 set of regulations to deal with coal
5 combustion residue, also known as CCR.
6 Those were released on the 4th and they are
7 starting a 90-day comment on them. I'm not
8 going to get into the details of that. If
9 you're interested, talk about -- you know,
10 try to start reading the 500 pages that are
11 on our webpage. If you have any detailed
12 questions, call this woman in our head-
13 quarters office in Washington, D.C.
14 It gets into a lot of discussion
15 about what's an impoundment, what's a
16 landfill, when do you put a liner in, when
17 do you not put a liner in, when do you do
18 leachate collection, when do you not do
19 leachate collection. It's rather
20 complicated and I must emphasize it's a
21 proposal. But what's in that proposal
22 right now is this language. Shortened,
23 in its simple term, it's essentially a
24 grandfather clause. But what it says right
25 now as proposed, as EPA is proposing that

1 coal ash landfills that are proceeding
2 under closure under a state or federal
3 order -- this would be one, this is being
4 closed out under CERCLA under my authority
5 under an AOC that I have with TVA -- is
6 that closures that start before the final
7 rule are exempt from this regulation.
8 Okay. That's really, I guess, all I really
9 want to talk about there.
10 We have some nice models back over
11 there on the TVA table. This is a -- you
12 know, kind of what it's going to look like
13 when we're done. This is what the cell
14 looked like pre-failure. All right. It
15 was a series of these dikes that were
16 stacked on top of each other successfully.
17 As one filled up, you'd build another one
18 on top of another one on top of another
19 one. One of the root causes, as I
20 mentioned, it was built on a weak
21 foundation, too wet, too high. So we want
22 to fix this; right?
23 The new thing is going to look like
24 this. And I encourage you to go look at
25 those 3D models over there. They're really

kind of a picture is worth a thousand words. But here is the enhanced perimeter diking system. You can see the lattice work. Again, I want to emphasize it's not just a single wall. The lattice work -- they put diameter. The lattice work was designed to be the most robust and provides much more protection geotechnically to prevent against that liquefaction failure, the foundation accident that would occur during an earthquake.

This is going to go down to bedrock and then this is the water surface here. This is Watts Bar. On top of this foundation treatment system, we're going to do earthen berms and then the dry ash is going to be stacked behind that. That's a nice little picture. Again, we've got a model of it over there, of what it's going to look like.

This is the stilling pond. It's going to remain. And as TVA is going to need to use river water in their cooling towers for combustion of coal. This is the restored Swan Pond Circle -- Swan Pond

1 Embayment. Excuse me. The restored north
2 embayment. This is Church Slough that has
3 already been restored. We've got some 3D
4 models of this, to look at.
5 I think I'm about done. What's in
6 the schedule for implementation? This
7 shows up as, I think, it's Figure 5 in the
8 action memo if you want to see a better
9 picture. But what it basically shows is
10 we're going to be out here until about year
11 four. As I mentioned earlier, some of the
12 first things we're going to be doing is
13 excavating. We're going to in year one do
14 an infrastructure, you know, right here
15 initially.
16 The first focus of the work will be
17 excavating the embayments, Swan Pond, the
18 north and central embayment, as well as
19 Berkshire Slough. While that's going on,
20 we're going to be building perimeter
21 containment. Again, it's a big effort,
22 perimeter containment. 16,000 linear feet,
23 12,000 borings we've got to get started if
24 we're going to get that thing completed.
25 You can see that goes on for a good year.

1 Filling and grading is going to go
2 on later in the project, in years two and
3 three. Then late in the project we're
4 covering the lateral expansion, the ash
5 pond and the dredge cell.
6 So where do we go from here? Phase
7 1 we talked about. Phase 2 I just covered.
8 There's the third and final phase is what
9 to do with the residual ash in the river.
10 Okay. When Leo is done -- we've talked
11 about this in the public -- there's going
12 to be on the high side, a conservative
13 estimate, perhaps as much as 500,000 cubic
14 yards of ash remains in the river system
15 when we're done. All right. That's --
16 about 350,000 of that is in the Emory
17 River, about 150,000 of that has been
18 transferred outside of the study area
19 during some of the storm events we've had
20 over the past year and a half.
21 My job in Phrase 3 is to evaluate
22 the risk posed by the material. What are
23 the human health risks posed by that
24 material and what are the ecological risks
25 posed by that material. What is the fate

1 and transport of that material. Okay. So
2 there is one more decision yet to be made
3 and that is to do with really the residual
4 amount of material.
5 This is going to be a long-term
6 study that involves collection of about 500
7 sediment samples, turtles, eggs, bird eggs,
8 fish. We're doing toxicity samples on
9 sediments -- on critters that live in bugs
10 -- of bugs and stuff that live in the
11 sediments. It's a massive undertaking as
12 far as the ecological study going on.
13 Hundreds of people working on it. It's
14 going to take some time.
15 So we don't expect a decision to
16 come out. I'll be back up here next
17 probably -- I'll be up here frequently.
18 But the next time I'm up talking about an
19 action memo probably won't be until 2011 or
20 2012 and that will be the final thing, what
21 are we going to do with the residual ash.
22 Just if you're curious what we can
23 do with residual ashes, there's about three
24 things you can do with it at this point in
25 time. One of the reasons I got assigned to

1 this project is that I've done a lot of
2 sediment cleanups in my 20 years with EPA.
3 We can decide to monitor it, which is
4 called monitor action recovery. You can
5 decide to monitor it and see how the risks
6 are minimized over time by nature covering
7 up the problem. You -- if the risks are
8 low, that's what you do.
9 If the risks are moderate then we
10 might cap. All right. If we have residual
11 ash that has some moderate risks posed to
12 benthic communities or fish reproduction or
13 birds or tree swallows, we might decide to
14 cap that with 6 inches of sand to eliminate
15 the exposure to the benthic community.
16 If our risks come out as high and,
17 woo, you know, we really have acute
18 toxicities of some certain species or we
19 really have an impact to fish reproductive
20 health, we made decide to go out and dredge
21 some more. Okay. The dredging, if we
22 decide to do any more dredging in 2011,
23 2012, it won't likely be with a hydraulic
24 dredge. Okay. It will most likely be done
25 with a mechanical dredge of some kind.

1 It's got a clam shell working from a barge
2 and we'd go out.
3 If we happen to miss -- in my
4 sampling, and we're collecting over 500
5 samples, if we miss, you know, a hot spot
6 or a honey hole and if that honey hole
7 shows a high risk for migration and
8 transport or if it shows a high risk for
9 ecological receptors, we may decide to
10 excavate it. Or it could be a combination
11 of all three. As I said, if anybody was
12 curious, that's what may be coming down the
13 road. But it's way too premature for me to
14 even speculate what's going on.
15 That is actually done. We've had
16 many balls in the air here. The sampling
17 analysis plan that describes all the work
18 to be conducted under this third phase is
19 essentially complete. It's going through
20 the final approval processes in TVA and I
21 hope to have that posted to all our
22 respective webpages by the end of this
23 month. Okay. So look for that about the
24 time the river opens May 20 -- 29.
25 Okay. We've got an action memo.

1 Where do we go? We've offered a 30-day
2 public comment period. The AOC that I'm
3 working on specifies a minimum 30-day
4 public comment period. That started on the
5 19th, the day after the plan was released
6 and it's a minimum of 30 days. It extends
7 out to June 18. Please, we encourage, if
8 you like out plan, tell us. If you don't
9 like our plan, tell us. We encourage
10 public comment on all the stuff we do.
11 This order was written in such a way to
12 build in as much transparency as possible.
13 We're really going above and upon what the
14 CERCLA and what the NCP requires of us as
15 far as public input and we want to make
16 sure you have a continuing say and voice in
17 that process.
18 The next document, I guess, under
19 the action memo you're going to see that
20 also will be put out for public comment is
21 this non-time-critical removal action work
22 plan. It's really kind of the design
23 approach of how this project will be
24 sequenced, how it will be delivered. We're
25 probably going to put that out for public

1 comment, I would say, more like in June,
2 July. It's being worked on right now.
3 The administrative record which
4 contains all the documents that EPA, TVA
5 and TDEC have relied on to make this
6 decision is being updated. It's out there
7 for public review and comment, as well.
8 And we're going to continue -- you know,
9 you're going to continue to see me around
10 and you're going to continue to see the TVA
11 people around and you're going to continue
12 to see the TDEC people around. All right.
13 You know, we're happy to be where we're at,
14 again, through the efforts of hundreds of
15 people working long hours. You know, we're
16 very proud of what we've accomplished.
17 We've gotten 3 million yards out of the
18 river in a year. I don't believe that's
19 been accomplished anywhere else in the
20 country.
21 But that doesn't mean we're going
22 home. Okay. We're going to continue to do
23 our community outreach and we're going to
24 continue to be available. We're keeping
25 our community involvement coordinator

1 staffed up here for the foreseeable future.
2 We're not sending them home yet. So we
3 expect there to be continued public
4 interest. We want to answer those
5 questions and we want to engage the public
6 and so we're going to continue to have
7 these meetings at least quarterly and we'll
8 continue to keep our webpages updated and
9 continue with the fact sheets. And, again,
10 you know, while we're making kind of a
11 change, we're not going anywhere any time
12 soon. So I want to emphasize that.
13 And with that, I believe I've
14 talked long enough. I think I'm done.
15 STEVE MCCRACKEN: Bruce.
16 BRUCE ENGELBERT: We're now going
17 to have an opportunity for people here in
18 the audience to ask questions or make
19 comments. We're going to have a panel of
20 four people who are going to be the
21 responders to the questions that you ask.
22 If I can have them come up right now.
23 Before we get started, if you need
24 to use the restrooms, again, they're over
25 that way. I think there's still some

1 cookies and water back there if you need a
2 little bit of refreshment. It looks like
3 we may have lost just one of our panelists
4 for a second.
5 Again, my name is Bruce Engelbert.
6 This is the third of these public meetings
7 that I've facilitated. And for those who
8 may not remember, I need to say that I used
9 to work for EPA in Superfund community
10 involvement, so I have a good understanding
11 and appreciation for the kinds of issues
12 that are being discussed here. I left the
13 agency four years ago and now work for a
14 small environmental consulting firm in
15 Charlottesville called E Squared where I do
16 facilitation and public involvement work.
17 We've just heard Craig give an
18 explanation of the proposed work that will
19 be done under the next phase of the
20 cleanup. And I'm sure that a lot of you
21 may have questions or comments that you'd
22 like to ask Craig and the other members of
23 our panel. In order to accommodate
24 everybody's opportunity to speak and
25 address the panel, say what's on their

1 mind, since there are lots of folks here,
2 I would just like to ask that, number one,
3 let's try and stay focused on Craig's
4 presentation. If you do have a comment,
5 let's try and be as concise as possible.
6 You know, take one or two minutes to say
7 what you have to say and we probably may
8 have time for you to come back up and ask
9 another question. But let's try and get to
10 the specific things that are important on
11 your mind.
12 You know, you may state a comment,
13 you may have a question, you may have a
14 criticism, you may have a difference or a
15 disagreement that you want to express.
16 All of that is fine. You may speak
17 passionately about how you feel about
18 what's going on here. That, too, is fine.
19 But it's also important to remember that we
20 want to do that in a respectful way and in
21 a constructive way.
22 Now, this is not going to be a
23 forum to resolve differences or
24 disagreements. It's just not the
25 appropriate place. We don't have the time

1 to do it. Also we'd ask if you have a
2 personal issue that needs resolving, it's
3 probably best to wait until after this part
4 of the meeting. The TVA folks will be
5 around and if you talk to them about your
6 specific needs, they'll be able to address
7 them in an appropriate way.
8 So we've got up here for our panel
9 first Chuck Head who is the senior director
10 of land and water resources at the
11 Tennessee Department of Environmental
12 Conservation, next, Leo Francendese who is
13 the on-scene coordinator who's been
14 responsible for getting those 3 million
15 cubic yards out of the river and for the
16 completion of Phase 1. You met Steve
17 McCracken earlier. Again, he's the head of
18 TVA's cleanup project here at Kingston.
19 And, of course, Craig Zeller who is the RPM
20 who is going to be responsible for the next
21 phase.
22 So now I'm going to invite you, if
23 you have a comment, to come up to one of
24 the two microphones here. And I guess
25 something we didn't say earlier. This

1 meeting -- we have a person over here who
2 is doing the recording of this meeting, so
3 please -- so there's a complete record of
4 what's being said and the questions that
5 are being asked so there can be appropriate
6 followup. She'd asked that when you come
7 up to speak that in addition to stating
8 your name and the community in which you
9 live, there's a yellow piece of paper here
10 and a yellow piece of paper on this side,
11 if you'd just write that down so she can
12 make sure she has that correct spelling of
13 your name because it's often hard when
14 you're just speaking into the microphone to
15 understand.
16 So come up if you've got something
17 to say. Again, speak freely, but also
18 speak fairly and speak in a way that's
19 respectful. And for those of us in the
20 audience, let's please remember to give our
21 full attention to the person who has the
22 microphone. With that, we'll begin over
23 here.
24 GENE SAGE: Gene Sage. I live in
25 Kingston. The selected perimeter

1 containment that you just described, is it
2 proven technology? Has it been used
3 someplace in the world to date? And then
4 do you have a repair plan if it should
5 break in the next X number of years? Is
6 this proposal going to be extended to other
7 TVA locations that have ash storage
8 problems?
9 CRAIG ZELLER: I can handle the
10 first part of that. The second part
11 dealing with other TVA facilities, I may
12 respectfully decline to Steve. Yes, it is
13 a proven technology. I've actually used it
14 on many Superfund jobs. Different
15 applications. This deep soil mixing I've
16 used really to solidify inorganic waste to
17 tie them up, bind them up in a concrete
18 matrix.
19 The best example I can -- it's been
20 around in the geotechnical world of
21 engineering for at least 30 years, perhaps
22 longer. It's commonly used by geotechnical
23 engineers to beefen up or strengthen up
24 weak foundation soils. The site that I've
25 used as an example where deep soil mixing

had been used is the Hong Kong Airport was a big one. They had a bunch of dredge spill that they were dredging out of the harbor, similar in consistency to perhaps wet fly ash. They put that dredge spill in a confined disposal facility near shore, all right, to make new land and then to beefen up or to strengthen up that weak unconsolidated material, they mixed it entirely using the kind of same deep soil mixing technique.

So it is a proven technology. It has been used for similar applications. We are starting a deep soil mixing pilot test. We've selected a contractor. Second or third week in June, we're actually going to go out and put three columns down to see -- you know, check it out and see if it does work here. We're convinced it will.

One of the biggest, I guess, problems you can run into is if you get into a lot of subsurface debris, cobbles, stones, bedrock. An auger bit don't go in bedrock very well. Saturated ash -- it should go through saturated ash like a

1 knife through hot butter is what we think.
2 But that's the reason we're doing the deep
3 soil mixing pilot test coming up in June.
4 Regarding contingency plans, should
5 it fail or should it leak, those will be
6 part of the design process. I would
7 envision that off the top of my head the
8 contingency plan would be to install more
9 concrete columns around in the area that's
10 determined to be deficient structurally.
11 But I want to emphasize that this
12 thing is really, really overdesigned. I
13 can't emphasis it enough. It's a 6.0
14 magnitude earthquake 36 kilometers from the
15 site and 7.6 order of magnitude site on the
16 New Madrid Fault and the return interval on
17 those events is 1 in 2500 years. So it's
18 not a 1 in 100 or 1 in 200. It's 1 in 2500
19 years. So, yeah, it's a -- it's pretty
20 robust in its engineering design. And
21 regarding the second part about other TVA
22 facilities.
23 STEVE MCCRACKEN: It's beyond the
24 scope of my responsibility to know what's
25 going on at the other sites. However, I do

1 know that an extended condition review was
2 done immediately following this spill to
3 look at the landfills at other sites and I
4 do know that there is a lot of work
5 underway, both engineering and physical
6 work that is being done, to make sure that
7 these landfills do not have similar
8 problems and as necessary to make fixes
9 where they're required.
10 I will say that at the end of the
11 meeting if you wanted to talk to somebody,
12 there's several people here in the room
13 that could probably -- that are involved in
14 the engineering at the other sites and the
15 person sitting right behind you can put you
16 in touch with them.
17 CRAIG ZELLER: Chuck, do you have
18 anything else to add?
19 CHUCK HEAD: I'm Chuck Head. I'm
20 with the State of Tennessee. I would add
21 to what Steve and Craig have said regarding
22 the other facilities. Our department has
23 been working with TVA. We're required TVA
24 to look at all their coal ash landfills and
25 all their surface impoundments for -- that

1 store coal ash to go in and evaluate the
2 structural stability of those facilities.
3 We have had a geotechnical firm go in
4 behind the TVA guys to affirm what has
5 happened there and what the conditions are.
6 Under our order with TVA, they're
7 required to submit a plan to handle any
8 deficiencies that are there. They are also
9 required to give us a plan for their
10 long-term and short-term management of coal
11 ash across the state.
12 GARY TOPMILLER: My name is Gary
13 Topmiller and I live across from TVA there
14 on -- most of you guys know where I live.
15 My question is I don't look at 300,000
16 cubic yards as residual. And since we've
17 got the buoys out there, I mean the dredges
18 and the buoys and all this stuff out there,
19 why don't we just keep dredging? Why don't
20 you get as much as -- when this first
21 happened, it was promised that they'd get
22 all this stuff out of the river.
23 Now, I know that's not going to
24 happen, but 300,000 cubic yards is not a
25 little bit of ash. Right now there's a

1 foot band of it around my dock and every
2 time you bring the lake up or lower it back
3 down, it's there again. Now, I know for a
4 fact on my side where the island was
5 between us, it was about 10 foot deep on
6 that island. In November they took it off
7 that island. But they have done no
8 dredging on my side of the island. None of
9 that on that side of the river has even
10 been touched by dredges. I see they
11 concentrate mostly on the main channel. So
12 why don't they get out what they can get
13 out before they take the dredgers out of
14 there?
15 LEO FRANCENDESE: In terms of the
16 expectation of getting all the ash out of
17 the river, that will never happen. There's
18 no conceivable technology to do all that.
19 So what the agency has done with TVA is to
20 craft an order that addresses the most
21 important problem first and the most
22 important problem was this plugging of the
23 river and threat of migration.
24 What's occurred through this first
25 big year of the push to do that was we

1 didn't want -- we wanted to minimize as
2 much migration down the river as possible.
3 And I realize it's disappointing to realize
4 that you're never going to get all the ash.
5 So the first focus was a real hard core
6 river-type dredging. I wouldn't even call
7 it an environmental-type dredging.
8 River-type dredging to remove as much as
9 possible.
10 That type of dredging has
11 classically between 5 and 20 percent
12 resuspension. It's got plus or minus a
13 foot in intolerance. So you have to make a
14 balance when you have that -- first of all
15 you're going to have 5 to 20 percent re-
16 suspension and then you're also going to
17 have plus or minus a foot. So you have to
18 begin to make a balance between, okay, so
19 what degree am I going to continue to pull
20 up native sediment, because then you begin
21 to get 70 percent sediment and 30 percent
22 ash. You change the river morphology and
23 you may do more damage by chasing a
24 diminishing return.
25 The second piece of that is, okay,

1 so that may make sense, but in the meantime
2 what does that 300,000 yards mean? What
3 does it mean to my health? What does it
4 mean to the environment? From a time
5 critical perspective, there's no direct
6 threat contact with ash. It's an irritant.
7 It's primarily sand. It acts almost like
8 sandpaper if you roll around in it enough.
9 Nobody is drinking that river water, so I
10 don't have a drinking exposure. Nobody is
11 eating it.
12 Throughout the course of this past
13 year, TVA has been pretty aggressive with
14 Craig's tutelage to see what's the impact
15 on the benthic organisms, the snails and
16 worms and critters, and there's little or
17 no toxicity associated with this residual
18 form of ash. This is a smothering affect.
19 To a large part, that's been removed.
20 So now what you're starting to see
21 is, okay, you left behind 300,000 yards.
22 By the way the range is 250,000 to 500,000
23 because we conservatively define the ash as
24 anything greater than a 50 percent mixture.
25 So then the second piece to that --

1 and that's what Craig is going to deal with
2 -- is every year Watts Bar Reservoir gets
3 on average 300,000 yards of sediment.
4 Sediment has a lower concentration of
5 arsenic than ash does, but every year Watts
6 Bar gets 300,000 yards of sediment.
7 There's going to be blending over time and
8 within three to five years that difference
9 in arsenic concentration gets blended.
10 In the meantime, there's no
11 immediate threat to public health and he'll
12 deal with the long-term risks through
13 further study. So it's really arbitrary
14 for the agency to force TVA to remove that
15 additional 300,000 yards of ash without
16 further risk demonstrated.
17 Now, I'll also agree with you that
18 ash is dirty. It's nasty. I get it on my
19 boots. I get it on my clothes. It's
20 visually unappealing. I think with time
21 you'll see that that recovery that takes
22 place naturally through mother nature will
23 minimize that issue.
24 GARY TOPMILLER: When you open it
25 up to the public, allow water sports and

1 stuff like that, they are drinking that
2 water.
3 LEO FRANCENDESE: I agree there's
4 some degree of consumption. So from a risk
5 perspective, based on the amount of
6 concentrations of metals -- and arsenic is
7 really the driver -- you'd have to swim
8 thousands of times for an hour each time to
9 begin to exceed health-based risks. I
10 think the number is somewhere near over
11 10,000. I have to check on that. It's on
12 our webpage.
13 GARY TOPMILLER: Yeah. But since
14 the dredges are already there and we know
15 the ash is there, why don't we dredge it
16 out?
17 LEO FRANCENDESE: To go back to my
18 first piece. Any amount of dredging is 5
19 to 20 percent resuspension.
20 GARY TOPMILLER: Okay.
21 LEO FRANCENDESE: And then the
22 second piece of that, if you want to keep
23 chasing ash -- at this point I have plus or
24 minus a foot tolerance in these dredges --
25 these are not really environmental dredges.

1 They're river dredges. If I want to keep
2 chasing the minimus amounts of ash, I end
3 up with a lot more sediment than I do ash.
4 At this point chasing that amount
5 of ash I end up with over 75 percent
6 sediment and less than 25 percent ash which
7 then gets resuspended and then I have to
8 keep chasing and then I'm 90 percent
9 sediment and 10 percent ash. So I never
10 get it all. So where do we stop?
11 BRUCE ENGELBERT: Do any of the
12 other panelists want to comment on this?
13 GARY TOPMILLER: If they've never
14 dredged on my side of the river, then how
15 do they know that there's not more than
16 that in there?
17 LEO FRANCENDESE: They do extensive
18 bathymetry and virbacore work which is all
19 available on the webpage.
20 JONI MORGAN: Hi. I'm Joni Morgan.
21 I live across Swan Pond, across the Emory
22 River on Emory River Road. And, Craig, I
23 had a couple of questions about your water
24 sampling. And you said that there were --
25 your graphs showed that there were a few

1 peaks on the graph that were above kind of
2 desirable or normal levels. Doesn't that
3 mean that there is some leaching occurring?
4 I mean not a whole lot. Like you compared
5 50 red marbles in a billion white marbles
6 which doesn't seem like a lot, but doesn't
7 that mean leaching is occurring?
8 CRAIG ZELLER: The one well that I
9 mentioned -- I can probably pull it back up
10 there -- was -- had concentrations six
11 times between 11 and 14 parts per billion.
12 Again, the MCL is 10. Since those
13 exceedences that we've had over the last
14 several years in that well has cleaned up.
15 Okay. It's actually below 10. The new
16 well we put in was at 30 and went down to
17 15 and now the last several months it's
18 been clean.
19 It suggests -- we've done a lot of
20 very aggressive leach testing with this.
21 JONI MORGAN: So you're saying it's
22 not leaching any more?
23 CRAIG ZELLER: Well, it's important
24 to note a couple of things. That ash has
25 been in place for 55, 50, 60 years. All

1 right. This plant went on line in about
2 '55. All right. It's been out in that
3 environment for -- since that time. 50
4 plus years. Okay. What I have there -- if
5 I compare this data set to others where
6 we've done -- monitored remedies only for
7 groundwater, it's comparable. Okay. The
8 difference with this job, it's big.
9 There's lots of attention on it and et
10 cetera. Okay.
11 But if I -- if we take this data
12 set and plug it in to one where I get
13 nobody showed up for that public meeting,
14 the answer would be the same. Okay.
15 Well, that's under status quo, do nothing,
16 okay, as it's been for 55, 60 years. I
17 would argue or make the counterpoint that
18 what we're going to do here with the
19 closure cell is going to vastly improve the
20 situation primarily through two ways.
21 We're going to surround it with 3
22 miles of containment dike which will be
23 constructed of 25 percent soil cement.
24 That soil cement is going to be less
25 permeable than the surrounding saturated

1 ash. So it should serve to impede or
2 prevent the flow -- the lateral flow of
3 groundwater from the cell into the river.
4 Okay. It should reduce that, that loading
5 or that flow rate, whatever term you want
6 to use.
7 Secondly, we're going to cover the
8 cell which currently isn't covered. Okay.
9 We're going to cover the cell with 2 feet
10 of very impermeable clay. And this is
11 based on 10 to the minus 7 centimeters per
12 second. It's a -- water doesn't trickle
13 through it.
14 JONI MORGAN: It's small.
15 CRAIG ZELLER: It's very small.
16 It's very thick. It's like modeling clay.
17 All right. The water just rolls right off
18 of it. That's going to reduce the
19 infiltration from 14 inches a year net down
20 to 1.4. So we're going to mitigate and
21 prevent lateral migration to the river and
22 we're also going to shed water off the top
23 of this thing. All right. So that's much
24 better than today, than the status quo.
25 So we would intuitively feel that

1 our corrective actions or removal actions
2 to the cell will vastly improve the ground-
3 water condition that we have today. Now,
4 we're continuing to study this. We've put
5 in -- earlier we put in 20 additional wells
6 that are going in now as part of my river
7 system study. All that geochemical data,
8 all the stratigraphy from that, you know,
9 putting those wells in and borings, all
10 that is going to be dumped into a state of
11 the art model called Mod Flow which is what
12 we use in this business. It's three
13 dimensional and uses all the site specific
14 conditions that we envision or what we see
15 out in the cell and we're going to gain a
16 better understanding of that system.
17 Then, again, you know, the
18 insurance policy here that I believe --
19 that I hope people -- you know, makes them
20 feel comfortable is that we're not just
21 going to cap this thing and go home. We're
22 going to cap this thing, surround it with
23 soil cement columns and we're going to
24 continue to monitor it.
25 And if over time if we see a plume

1 develop or if we see unacceptable
2 concentrations entering the river that
3 provide some impact, through that five-year
4 review process, and I have the commitment
5 of TVA, if that monitoring data suggests
6 that, oops, we've screwed something up
7 here, we'll fix it. And we will. I want
8 to emphasize it. That's routine EPA
9 business. We do that on every remedy we
10 ever complete. We optimize groundwater
11 pump and treat systems frequently. We fix
12 groundwater systems that didn't work
13 previously. And we've also installed
14 groundwater remedies where we didn't have
15 one before.
16 So we're prepared and the system is
17 set up to prepare with that in the future.
18 But I would say it's very unlikely based on
19 60 years of sitting there, based on the
20 improvements with the engineering and
21 closure of that cell and based on some of
22 the other very aggressive leach testing
23 we've done. I'd say the chances of us
24 developing a discernable plume out there
25 are unlikely.

1 JONI MORGAN: That's the leaching
2 from the 50-year-old ash. And one of the
3 reasons that was given in the answers to
4 the concerns sent in to the EE/CA was that
5 you didn't want to put a liner in because
6 you would have to excavate the old ash and
7 put in a new liner and that would be time
8 consuming and very expensive. But my
9 thought is if the old ash isn't leaching,
10 why not put the liner on top of the old ash
11 to prevent any potential future plumes from
12 the new ash.
13 I understand that you're saying
14 that there's very little likelihood that
15 it's going to happen with the setup that
16 you're envisioning, but you're also looking
17 at any and all potentials and you're going
18 to monitor for these potential plumes and
19 if you find one, you're going have to come
20 back and dig it all up and put in a liner.
21 So why not do it now before you start
22 putting new ash on top of the old ash and
23 make everybody feel a little more
24 comfortable?
25 CRAIG ZELLER: Well, this is really

1 not new ash and old ash. This is really
2 ash that was in the impoundment. It was
3 old ash.
4 JONI MORGAN: Right.
5 CRAIG ZELLER: It's old ash that
6 just happens to be spread out in Berkshire
7 Slough now.
8 JONI MORGAN: But the old ash
9 that's there right now is the old ash, it's
10 pretty compacted, it's not leaching. But
11 when you're dredging all this other stuff
12 up and filling on top of that, I would
13 envision that a lot of that -- some of it's
14 old, yeah, because it burst out of the dam,
15 some of it's new, it's mixed. It seems
16 like it would make sense to go ahead and
17 put a liner in.
18 CHUCK HEAD: Let me add a little
19 bit about that from the State perspective.
20 TVA asked for and we permitted a landfill
21 and we began monitoring the groundwater at
22 the site in 2000. And during that time
23 period, the groundwater has looked pretty
24 good. But I think the thing that is -- may
25 have happened with this one particular well

1 is that when you drill a well you basically
2 have a fairly violent action, you drill
3 down. And what I think has happened here,
4 like we see happen a lot whenever there are
5 new monitoring wells put in place, is it
6 stirs up the material. And probably --
7 what we think happened is what you saw in
8 the sample that was collected were
9 particles of the ash itself that were
10 analyzed and not just the water. And I
11 think the results that Craig has shown here
12 for the last seven months demonstrate that.
13 I want to talk a little bit about
14 the ash going in on top of the landfill.
15 It is all ash that was in the landfill. It
16 varies in age a little bit, but basically
17 was in there and was in a fairly wet form.
18 The remedial action design here for that
19 is we've dredged the ash up or -- and
20 recovered it. It's going to be dried.
21 My understanding is the ash will have a
22 moisture content of about 25 percent. And
23 at that level really the ash doesn't
24 release any water, so I don't think there's
25 going to be any water going down. So we

1 don't think that that's going to cause an
2 additional problem.
3 The other thing I would say is
4 really what you're monitoring at that point
5 in the monitoring wells is really -- the
6 level of the water in the monitoring wells
7 is the level of the water in the river. So
8 it's -- in terms of a groundwater plume,
9 it's truly not that. It's river water
10 that's under the landfill.
11 Now, Craig has been doing this for
12 a pretty good while with the CERCLA
13 program. We have lots of landfills across
14 the state and he mentioned earlier that
15 there would be a monitoring program with
16 that. And, you know, that's one of our
17 requirements, as well. We do have
18 requirements for corrective action to be
19 taken should we have those type of
20 problems. So I think we feel comfortable
21 with that. Nothing is 100 percent. But we
22 feel like it's an acceptable method to
23 resolve the problem.
24 L. P. MALMQUIST: My name is L. P.
25 Malmquist. I live in Kingston. I live

1 just south of the junction of the Emory and
2 Clinch River. My problem is fly ash. At
3 my dock when we measured it last August, I
4 had about 2 and a half inches. I'm sure I
5 have much more now. When the presentation
6 was talking about Phase 3, you were talking
7 about two or three years from now about
8 doing something. Right now my grand-
9 children like to water-ski and they can't
10 water-ski out of there. I have to either
11 go up the Clinch or down the Tennessee
12 because they're standing in mud.
13 It is increasing when I wash my
14 dock and I've lived there for 35 years.
15 Every spring the water raises. You clean
16 your yard, you wash the docks. Well, I
17 washed it last Saturday, the water was
18 gray. There was a lot of stuff still
19 coming down. I wasn't washing mud off the
20 dock. I was washing fly ash. You know,
21 it's still there.
22 Now, what he just said was they're
23 going to do something in two or three years
24 from now. Does that mean I have to live
25 with fly ash for the next two or three

1 years? That isn't what TVA told us. They
2 said, we're going to clean up. I look
3 around here and there's other people who
4 live downstream who have the same problem.
5 I understand. I've been on
6 landfill commissions for the county here
7 and I understand what you're doing there.
8 You're doing a good job. I have no
9 problems with that. What I have problems
10 with is that fly ash out there now. I
11 don't want my grandchildren swimming in it.
12 You know, I asked them last year when the
13 water comes up in the yard, I mow the
14 grass, what am I supposed to do and they
15 said wear a mask.
16 You know, the first thing that TVA
17 said was don't walk around in it. Don't do
18 this, don't do that. Now you said roll
19 around in it. That doesn't make sense.
20 You know, what I want to know is how soon
21 is somebody going to do something about
22 that fly ash downstream. You know, people
23 are going to be all up and down the river
24 walking in it. I don't think it's fair to
25 wait two or three years.

1 BRUCE ENGELBERT: Okay. Leo.
2 LEO FRANCENDESE: It's Mr. Brown?
3 Mr. Malmquist?
4 L. P. MALMQUIST: Yes.
5 LEO FRANCENDESE: What is the
6 primary fear that you have for your
7 grandchildren?
8 L. P. MALMQUIST: Well, one --
9 BRUCE ENGELBERT: Can you come back
10 so everybody can hear?
11 L. P. MALMQUIST: They like to swim
12 in there. My granddaughter is going to
13 swallow water out there. You know, if you
14 walk in it, you're black. You know, I
15 irrigate some of my garden off there. I
16 have no worry about the toxicity of it.
17 I'm just talking about the physical thing
18 that if you get in the water, you're black.
19 LEO FRANCENDESE: So you're not
20 worried about the toxicity issue?
21 L. P. MALMQUIST: I'm not worried
22 about the toxicity. We've burned coal for
23 hundreds of years, you know, and that is
24 not as much of a problem as it is a
25 physical problem. You know, I want you to

1 tell my daughter-in-law it's all right for
2 her children to swim in there. Do you want
3 your children to come and swim in there?
4 See, that's -- it's a perception problem
5 and it's going to be a perception all the
6 way down. You get farther down from
7 Kingston, the dilution factor is what?
8 Four or five to one?
9 LEO FRANCENDESE: I have to applaud
10 you. You've probably the most reasonable
11 perspective I've heard in a while. So it's
12 not a toxicity issue?
13 L. P. MALMQUIST: No, it's not.
14 It's a physical thing that it's like
15 walking in mud out there.
16 LEO FRANCENDESE: It's dirty.
17 L. P. MALMQUIST: It's dirty.
18 LEO FRANCENDESE: All right.
19 CERCLA is not driven by -- I have to be
20 very frank with you because I respect your
21 opinion here on this. You've weighed --
22 you've listened to the information and
23 you've made your own decision. The sign
24 says it's not a toxicity driven issue and
25 what you're approaching is that it's a

1 dirt -- it's a dirty issue.
2 L. P. MALMQUIST: Let me back up.
3 I'm a retired veterinarian. After I did
4 it, I worked for ACSCR with the Oak Ridge
5 Health Effects Subcommittee for three years
6 up there while they were doing the
7 pollution coming out of Oak Ridge. You
8 know, so I know what happened and I -- you
9 know, Clinch River is a hard river. You
10 know, it all went down. You're correct,
11 the sediments will cover it up. I go
12 across the river where it was deep before
13 and it's shallow now because it's filled
14 in. The center of the river, there isn't
15 going to be anything there in a couple of
16 years.
17 I'm talking about the shoreline
18 that we have to walk in now and there's
19 people all the way along there from the
20 skimmer dike down probably to the Kingston
21 Park and below that people are going to be
22 walking around in fly ash and it's mud and
23 it's dirty and it's perception that it is
24 not clean.
25 LEO FRANCENDESE: Yes.

1 Aesthetically you're correct. The
2 perception is it's not clean. Statutorily
3 CERCLA doesn't give me the authority to
4 direct somebody to clean something up for
5 aesthetic, dirty reasons. So I empathize
6 with your opinion, but I'm glad you've come
7 to terms with the signs behind it. So I
8 don't have an authority-based decision to
9 offer you.
10 L. P. MALMQUIST: My question is
11 TVA said they would clean it up and they're
12 not going to.
13 LEO FRANCENDESE: Yes, sir. I hear
14 you.
15 CRAIG ZELLER: I'd like to add just
16 a -- let me jump on that just a second. As
17 part of the embayment closure, we've run
18 risk assessments, human health exposure
19 assessments. Looking at just that, it
20 would be like a trespasser's scenario and
21 we've looked at exposure for 84 days of
22 somebody actually eating ash, rubbing ash
23 up and down their arms, drinking the water
24 that might contain ash and running those
25 numbers gets back to your toxicity piece.

1 It does not pose under 84 days a year --
2 and that's walking around in the stuff
3 that's still 30 feet deep out in front of
4 the old dredge cell -- that quantitative
5 risk assessment showed that it's not --
6 does not pose an unacceptable risk.
7 LEO FRANCENDESE: He already
8 understands that. So his issue is that
9 it's dirty. It's filthy.
10 BRUCE ENGELBERT: Okay. Thank you
11 for your comment. Thank you for waiting
12 patiently.
13 FRANZ RAETZER: My name is Franz
14 Raetzer and I certainly don't agree with
15 Dr. Malmquist that this stuff is not toxic.
16 Remember, the toxicity of fly ash was
17 established by the industry a little bit
18 more than 25 years ago and the EPA just
19 went along with it. They just said it's
20 not toxic, it's not proven.
21 You cannot tell me that there is
22 nothing leaching out of that stuff into the
23 water because if that was true, we wouldn't
24 have any mineral water, we wouldn't have
25 also -- I lived in Minnesota and they have

1 huge iron deposits there and their
2 groundwater is full of iron. Fortunately,
3 it's not toxic. Down here we have arsenic
4 and all kind of heavy metals in there and
5 you tell me that nothing of that goes into
6 the water. Okay.
7 You also say that there is nothing
8 going to leach out of the field, the new
9 field that you do. You don't put the liner
10 in there, but you have only drilled all the
11 way around the field. You have not
12 measured in the field of how far down
13 actually this toxic material has gone.
14 So it was there 50 years, yes?
15 Maybe it has gone down 10 feet. Okay. Now
16 in the next hundred years, it will go down
17 further down and it will hit bedrock and
18 then it will float out. And so I just
19 don't believe your theory, you know. It's
20 not scientific on what you are doing.
21 LEO FRANCENDESE: I'll take the
22 first part and then Craig will take the
23 second part. All fly ash repositories are
24 not created equal. All fly ash is not
25 created equal. I think there's over 900

1 impoundments in the nation. And as you
2 read through the literature -- and my life
3 is pretty boring because I've read
4 thousands of pages of this stuff over the
5 past six months -- you go to different --
6 you look at different repositories. A lot
7 of the leachability of the fly ash is not
8 driven by fly ash, it's driven by its
9 collocation with other material that
10 creates an acidic environment that causes
11 it to leach. In this particular
12 circumstance, the fly ash of Kingston is
13 not collocated with enough material that
14 it's causing it to leach.
15 Now, within the environment, within
16 the river itself they're doing extensive
17 studies. ERDC, the U. S. Army Corps, did
18 their own study to see if those conditions
19 exist within the river to cause that
20 leachability. At Kingston there does not
21 appear to be that dissolved phase
22 leachability issue. Other places in the
23 country, there definitely are and I believe
24 it's because of different PH environments,
25 because it's collocated with material that

1 drives its PH down.
2 In terms of the groundwater
3 leachability, I think Craig would be the
4 next one. I also want to add, probably the
5 greatest concern for me on the site for the
6 past year in terms of managing risk is my 5
7 to 700 workers a day and their respirable
8 fraction of fly ash.
9 On this particular site, we use the
10 most stringent standard in the nation for
11 silica, which is the primary risk component
12 associated with inhaling fly ash. So I'm
13 really comfortable about that piece. I've
14 been told I'm a little bit of a pain in the
15 neck about that, but I think that that's
16 the primary toxicity realm at Kingston.
17 From a groundwater perspective, I think
18 Craig should take the next piece.
19 CRAIG ZELLER: We're continuing to
20 evaluate the groundwater on the vertical
21 horizon as well as the aerial extent.
22 That's going on as part of my river system
23 EE/CA and we're putting in, as I mentioned
24 previously, about 20 additional wells that
25 are screened in multiple intervals looking

at vertical gradients, looking at lateral transport, looking at, you know hydraulic conductivities, looking at additional leach tests.

So we feel like we understand the system pretty well, well enough to make this decision at this point. But we're continuing that knowledge. We're continuing to build upon that knowledge and we're continuing to adapt as we need to and make modifications if we need to in the system.

Somebody mentioned earlier about what would you do if we needed groundwater? You know, I'm not digging it up, putting a liner in. If in the unlikely event I get a groundwater plume coming off the closed out cell, I'm not digging it up and putting a liner down. I can promise you that. That's not going to happen. What I would do is either I would collect the water coming out of it or I'd figure out a way to treat it in situ by chemical manipulation.

BRUCE ENGELBERT: Chuck has a response, too.

1 CHUCK HEAD: I just want to talk a
2 little bit about from the Department of
3 Environment and Conservation's perspective
4 on this. One of the things that we did
5 when the release first occurred was we
6 agreed to sample anybody's well that was in
7 a 3-mile radius of the landfill and the
8 reason for that, there were a lot of folks
9 concerned about whether there might be
10 heavy metals in the drinking water. So we
11 did that and we didn't find any metals in
12 any of those wells during that sampling
13 event that were anywhere close to what we
14 call a maximum contaminant level which is
15 if it's at that level or above, it's not
16 safe to drink.
17 You were talking about the facility
18 itself and where the ash was. I think if
19 you look at the historical evolution of
20 this site, the site was built in the 1950s
21 and basically pretty much to about 760 feet
22 elevation, I believe, it's ash coming up.
23 So where we've been sampling monitoring
24 wells out there at the landfill, at the
25 fill site, that's actually water that's in

1 coal ash and we have not seen arsenic or
2 other metals that are at levels that we
3 believe would be a long-term threat.
4 We recognize -- let me rephrase
5 that. We share the concerns that you had
6 about whether this ash in water let high
7 levels of arsenic or cadmium or lead or
8 other metals out. So we worked with TVA
9 and EPA and us, we all took samples and we
10 put it through this process called toxic
11 characteristic leaching procedure where you
12 put ash in water and you decrease the PH
13 and then you analyze the water. The low PH
14 helps the metals leach out and it's
15 supposed to give you the environment that
16 would most likely leach the most of any of
17 those metals out. And we tested that and
18 none of those samples came even close to
19 the arsenic levels.
20 Now, Leo mentioned briefly, but
21 I'll also state, we worked with the Corps
22 of Engineers and their office out of
23 Jackson, Mississippi, and they did even
24 further analyses of the soil or of the ash.
25 They took the ash and they used different

1 PH levels to try to see if they could get
2 any higher levels of material to come out.
3 We didn't see anything that we thought
4 would pose a problem there.
5 So we've tried to do the best that
6 we can in looking at that. Again, I think
7 the goal here is to resolve the problem.
8 There's been a plan proposed. But one of
9 the things we are going to require is
10 constant and vigorous groundwater
11 monitoring so that we catch a problem early
12 if it occurs. But we have tried to take a
13 good faith look at it.
14 FRANZ RAETZER: That brings me to
15 the next point. So why do you have to
16 monitor if you are so dam sure that there's
17 nothing going to leach out? And then the
18 thing is if you find something in 25 years,
19 what are you going to tell us? You're
20 going to tell us, well, just don't drink
21 the water anymore.
22 STEVE MCCRACKEN: I'd like to touch
23 on that. The CERCLA process is the reason
24 that -- is the authority that we're working
25 under to conduct this cleanup activity. It

is also the authority that will assure that the remedy or the cleanup is well done and that it continues to be well done over -- into the distant future. That's why we will keep on monitoring this site frequently, there will be an analysis that's done every five years at least, and the TDEC and EPA will continue to do the oversight that they're doing today and TVA will continue to be the steward for whatever comes from that.

BRUCE ENGELBERT: I guess -- I think we have a disagreement here that's probably not going to be resolved so --

FRANZ RAETZER: But there is another question. You always brought up --

BRUCE ENGELBERT: Excuse me. Just one second. Just one second. We have a couple of other people who have been waiting fairly patiently. If you would like to just take a seat and in a minute, once they've had a chance --

FRANZ RAETZER: There's one thing that they always bring up is that this water will run into the river. That's not

1 what I believe. That water is below the
2 river, so it will spread out farther, much
3 farther. So we will have probably drinking
4 wells that further down go into that ground
5 water. It's not going into the river and
6 get diluted like what you do with the one
7 from -- the drainage water that you just
8 let back into the river so that it gets
9 diluted. So...
10 BRUCE ENGELBERT: There's obviously
11 a disagreement. You've been heard by them.
12 What they've said is they are going to be
13 vigilant in following up and monitoring and
14 we're not going to resolve that issue here.
15 But I think I did hear Craig say earlier
16 that the sampling plan is going to be out
17 for public comment. Is that right?
18 CRAIG ZELLER: Yeah.
19 BRUCE ENGELBERT: So if there are
20 additional comments or issues, you're going
21 to have a chance to respond.
22 CRAIG ZELLER: Yeah. I would
23 respond to that as we've got paired
24 piezometers out there, paired wells,
25 different levels, shallow, intermediate,

deep, and we look at water head in that. We've got a positive upward, we've got a vertical upward gradient in the wells that we have out there right now. So the data we have suggests strongly that it is discharging into the Emory River and it's not a vertical downward gradient, i.e., to some coarse bedrock feature.

BRUCE ENGELBERT: We're going over here. He's been waiting quite a while. Sir.

CLYDE HARMON: Yes, sir. I'm Clyde Harmon and I've recently bought a house out on Swan Pond Circle right where you turn to go to the quarry road. If I had known these conditions, I wouldn't have bought the house. I've got about five or six bushes that was getting pretty high, so I trimmed them back to make it look good.

And I call them coal trucks because that's what I'm used to. The empties coming back in has got a tendency to hold to the inside circle and the loaded ones, I don't guess they could stop anyway, but they come over and leave the blacktop and

1 cut a rut in my yard. And when it comes a
2 heavy rain off of Swan Pond Circle, it's
3 downhill, it's a tremendous water. And
4 I've got a tile under my driveway and this
5 where they cut these ruts, it washes that
6 mud under my driveway and I'm not really
7 able to clean it out, but I'm trying to.
8 I first went to the rock quarry's
9 foreman down there and told him my problem
10 and he come up and looked at it and he said
11 -- because I had one cinder block in there
12 at the edge of the blacktop, not on the
13 blacktop. But he said, I'll bring some
14 rock about the size of a basketball. He
15 put seven or eight of them there and after
16 a few days, they all disappeared. I figure
17 the truck drivers got on him about it and
18 they just took them back up.
19 BRUCE ENGELBERT: So you've got an
20 issue here that I don't know whether
21 anybody can respond to at this point or
22 whether somebody -- he should be talking
23 with somebody afterwards? Steve?
24 STEVE MCCRACKEN: We've got a -- as
25 you can imagine, we've got an ongoing

relationship with the quarry. And I'll be happy to have our folks come out there and take a look at it with you and see if we can talk to them and get some better resolution for you.

BRUCE ENGELBERT: Okay.

CLYDE HARMON: Thank you.

BRUCE ENGELBERT: And they've got your name, so there will be follow-up from TVA. Okay. Thank you, Mr. Harmon.

FLO HOPKINS: Flo Hopkins, Smith Mountain Road, Rockwood. I have a short question for Craig. Craig, I believe I understood you to say that this action closes the permitted landfill and after four years, no more plant ash would be received. My question is about the daily plant production ash for the next four years. Are we to understand that that will be incorporated in with your project in the next four years?

CRAIG ZELLER: Details are still being worked out. Right now the plant is not generating, so they are not producing ash. But they have a new scrubber that

1 they want to get up and shake it down and
2 start it up. I think it's a 14-week
3 process. So that will generate some ash.
4 Chuck's program -- plant ash is
5 really outside of my authority. I'm
6 dealing with the cleanup of the actual
7 spill itself. Chuck's program under the
8 commissioner's order -- and, Chuck, you can
9 jump in at any time -- has required TVA to
10 submit a short-term and long-term ash
11 management plan. That was just submitted
12 and the details of which are being debated
13 by both TDEC and TVA at this point.
14 During time critical, okay, plant
15 ash was commingled with the ash being
16 removed from the river because they were
17 going into the same ash management system,
18 the rim ditch/sluice trench. The
19 non-time-critical is slightly different.
20 But the details as far as -- they're going
21 to convert to dry ash at the end of 2011 or
22 early 2012 and changes things dramatically.
23 So it's really what to do with ash
24 now -- between now and when they go to dry
25 ash conversion and Chuck's program is

1 working on that. Chuck, is there anything
2 that you'd like to add about that? It's
3 going to be handled in the short-term,
4 long-term ash management plan.
5 FLO HOPKINS: That's not yet final?
6 CHUCK HEAD: We're negotiating with
7 TVA on the new ash that's going to be
8 generated once they come back on line,
9 about how that will be managed. They've
10 got some different options they're
11 considering in terms of where it would be
12 disposed and they're looking at --
13 currently they generate a wet ash. They're
14 talking about going to a dry ash which will
15 be easier to manage.
16 So we have a commissioner's order
17 that was issued, so they're having to look
18 at that, at this facility as well as their
19 other facilities across the state. We're
20 supposed to meet sometime in mid June to
21 sort of hash some of this out a little bit
22 more to come to a resolution about how
23 things are going to be handled.
24 One of the things that we're
25 working with TVA and EPA on as well is that

1 EPA has issued some proposed rules for how
2 you would dispose of coal combustion
3 residue which would impact the coal ash and
4 also the gypsum that's generated from the
5 scrubbers. So we're trying to put all that
6 into the equation and come up with a method
7 for that to be disposed of in a proper way
8 and in a way that we hope we won't have to
9 worry about it in the future.
10 FLO HOPKINS: So prior to the
11 conversion to dry ash, what will be
12 happening to the daily ash?
13 CHUCK HEAD: Well, that's what
14 we're working on. I mean right now they're
15 not generating much ash at all, if any.
16 And as Craig has said, that's been
17 commingled with the ash that's dredged and
18 it's actually gone for disposal off site.
19 As we get to the point where there's not a
20 mixture of ash from the CERCLA release with
21 ash from the generation of electricity,
22 we're going to have to work out a way to
23 separate that and make sure that it's
24 disposed of in the right way.
25 FLO HOPKINS: Okay. Will there be

public hearings on that? Will that be public in June?

CHUCK HEAD: I think it depends on how it's handled. As an example, if TVA proposed to dispose of coal ash on site and wanted to open a new landfill there, then, yes, that would happen. If TVA wanted to dispose of that somewhere else where there's a permitted facility, then probably not.

They have some hoops they have to jump through under the National Environmental Policy Act, so there's a public hearing/public comment period. That's not required by us but required by the federal government. If it was going to be taken to a new off-site location in our state, then there would be a permit application for the new site and it would be subject to all the public notice, public comment.

FLO HOPKINS: Okay. Thank you.

BRENDA TIMM: Brenda Timm, Kingston, Tennessee. I'm with the CAG and we had a question -- well, first of all,

1 we'd like to state that we really would
2 like to see a liner put in place. We don't
3 feel that the citizens of Roane County are
4 protected to the manner that they would be
5 if this ash was hauled off site somewhere
6 else with a pond that is lined.
7 My question to you is, if this ash
8 was to go off site instead of the
9 alternative that was selected, the 3B
10 alternative on site, would it be required
11 to go into a landfill that is lined?
12 STEVE MCCRACKEN: Let me answer
13 that. The best answer I can give you is
14 that the selected alternative is for
15 on-site disposal back into the dredge cell
16 which will be structurally designed to
17 withstand even the most severe conditions.
18 That's the decision that's been made. And
19 so the speculating on what we might or not
20 do at this point is really covered in all
21 the alternatives analyses that were done in
22 the EE/CA, we feel.
23 We believe that the alternatives
24 covered the range of things that could be
25 done. They were all looked at for

1 protectiveness, human health and the
2 environment. They were looked at for
3 implementability and they were looked at
4 for -- looked at in respect to cost
5 effectiveness and that the best selection
6 -- and the best alternative was selected
7 and that public comments that were
8 received, including the one from the CAGs,
9 were considered and that we came to the
10 correct conclusion and that was Alternative
11 3B.
12 BRENDA TIMM: That explains to me
13 what you selected and why, but my question
14 still is if this ash were to go to off
15 site, would it not be required to go into a
16 lined landfill?
17 CHUCK HEAD: I'll try to answer
18 that from the State of Tennessee's
19 perspective. If I don't do a good job,
20 please feel free to follow up.
21 BRENDA TIMM: I will.
22 CHUCK HEAD: You know, right now we
23 have landfills in state that accept coal
24 ash. If it's an existing landfill and
25 until the federal rules go into place --

1 and nobody knows what those rules are going
2 to say -- but if it's a permitted landfill,
3 they can accept coal ash now, then if there
4 was some effort to move it to one of those
5 landfills for disposal, then it could
6 occur.
7 If it was going to be taken into a
8 landfill where an expansion was going to be
9 done or a new landfill was going to be
10 built, then in those cases under our
11 regulations that new landfill, that
12 expanded landfill has to have is liner.
13 BRENDA TIMM: So basically by
14 getting this in before the new regulation
15 comes out gives them a free pass to go
16 ahead and continue to do it without a
17 liner?
18 CHUCK HEAD: Well, I guess from my
19 perspective, we have -- Kingston is not the
20 only place in the state where coal ash is
21 disposed currently. In all those other
22 locations in the state where that happens,
23 if they have an existing permit, they don't
24 have to have a liner. It's only when
25 either the landfill decides to expand or

when a new landfill is built.

BRENDA TIMM: Thank you.

VINCE JOZWIAK: My name is Vince Jozwiak. I live on Smith Mountain in Cumberland County and I'd just like to comment on the decision that you've made tonight. Being in Cumberland County, I think my interests are a little different. First of all, I am a rate payer for buying my electricity from TVA, so I'm encouraged that you've selected the most cost efficient option. I think that will benefit all of us in the long run.

Secondly, though, because my county commissioners chose to authorize the creation of a landfill for coal ash on Smith Mountain, I was encouraged that none of this coal ash will actually be heading in the direction because you're making this decision before any possible time period that they could get it finished and you're keeping it on site.

I would like to comment that I'm encouraged that TDEC and TVA were able to come to agreement for on-site storage of

1 the coal ash. I know that that is TVA's
2 number one priority is to keep all of the
3 coal ash that they produce on site and I'm
4 encouraged that TDEC was able to come to an
5 agreement with them.
6 The manner in which they do it
7 aside, I think that that's the best option
8 for TVA to take. 35,000 trucks on the
9 road, and they all have to pass my
10 driveway, would be a sore spot in my life,
11 I guess. So I would like to encourage TVA
12 and TDEC and EPA, if they get involved, to
13 keep that in mind as they go forward
14 because in the long term when TVA converts
15 Kingston to dry ash and all of their sites
16 are making dry ash, I would encourage them
17 to work with TVA to make sure that they can
18 keep all their coal ash on their properties
19 wherever they may be. Thank you.
20 DON SIMON: I have problems doing
21 that. But what I would like to say is all
22 of the --
23 BRUCE ENGELBERT: State your name.
24 DON SIMON: Don Simon. I live in
25 Swan Harbor Prison. I've been held captive

for the past 17 months. I realize I live in a construction site. I have put up with dredges, gravel trucks, railroad cars. You name it and I'll put up with it for probably another four years. I do applaud Steve who has at least listened and done some things to assist us in that area.

But those of you that don't live in this disaster area, that don't travel it on a daily basis, people think I have only one concern and that is the water and that's a bunch of malarkey, because it is really a nightmare to live in this area. When you sleep with earplugs, when you hear the dredge break down because some boom hit the side of a barge with a clam shell and says, I broke the linchpin, you know, some of this gets really old.

If you have relatives out there, if you live out there and you have to put up with the hardships and then you find out that the TVA has given $7500 for a bass tournament, they've given $15,000 to put a bunch of birdhouses up that will supposedly monitor the environment, where you have a

1 code that says you have to drop the bumps
2 on your boat lift to use it, all of this
3 sounds really good.
4 But right now with all this
5 wonderful monitoring they're talking about,
6 we've got a major oil spill in the Gulf.
7 We have fly ash in our neighborhood because
8 of wonderful monitoring, as well. So tell
9 us it's all going to be well and good and
10 to tell us it's going to be better than it
11 was before sounds good, but how can you
12 promise that with the past history?
13 Whether it was running a railroad digital
14 sign, whether -- there's been one error
15 after the other. The gypsum pond, you
16 found out you had to line it. It goes on
17 and on and on.
18 If you kept a diary and if you've
19 lived this and been a member of the CAG and
20 went through all this, quite honestly, this
21 community has been harmed. I have received
22 nothing so far. I don't even know what I
23 want where I live. I guess I want some
24 quality of life back and I don't want false
25 promises and I want TVA to do something for

1 me instead of give us slide presentations
2 and tell us how wonderful they do.
3 Last year the river was open as an
4 advisory situation for part of the year.
5 We've been given six different dates and
6 back last year. Yes, there's a cutter head
7 dredge and there's an anchor out there. It
8 could be dangerous to the public. They
9 marked a channel for us. What did they do
10 this year? There's a few barges out there,
11 a couple of dredges out there. They dredge
12 24 hours a day. It's real fun to live with
13 those.
14 And then they tell us it's a safety
15 issue. It isn't a safety issue. It makes
16 their job easier. Their contractors talk
17 when you talk to them in the supermarkets
18 and different places. And this river was
19 never going to be open on time. They say
20 they've done a wonderful job. They seem to
21 work out there.
22 But let me tell you something.
23 This is one of the easiest dredge
24 operations in the United States. There's
25 no traffic out there. It's a narrow little

body of water. It's not a big dredge deal. The biggest problem they've got is they've got a ton of acreage out there with a lot of people working and they make errors after error after error.

Well, what I say is, TVA, come to the plate and help those of us that live that you're holding prisoner, that the only thing you haven't done is put bars on my windows and doors and tell me when I can leave and when I can come home. Thank you.

EARL TYLER: My name is Earl Tyler. I'm from Smith Mountain. I just wanted to ask for a couple of things, clarification, first of all. Leo, you said that it was an acidic environment that caused leaching; is that correct? Low PH?

LEO FRANCENDESE: Yes, sir, that's one of the factors. The other one is something called a redox potential.

EARL TYLER: Okay. But then, Chuck, you were saying about the testing that had been done and I wasn't sure if you were agreeing with Leo or contradicting him. Could you --

CHUCK HEAD: I agree with Leo.

EARL TYLER: Okay. So it is an acidic condition which would cause leaching.

CHUCK HEAD: There are two factors I think is what Leo has said. There's acidity of the water itself and then there's something called the redox potential. So the two of those work in combination in determining the level of metals that would leach out from ash into water.

EARL TYLER: So that would tend to indicate that if you had something, for example, acid mine drainage, you probably wouldn't want to put coal ash there; right?

CHUCK HEAD: Well, I'll try to answer your question that way. I'll try to answer your question. You know, in our landfills the way they're designed and the way that we ask that they be operated, if coal ash goes into a landfill, there is a synthetic liner and then below that a clay liner above the native material and any water or leachate that collects in that is

1 pumped out so that it does not get into the
2 environment.
3 So we don't believe that in that
4 scenario coal ash would go through the
5 synthetic liner and the clay liner to get
6 down into the --
7 EARL TYLER: But if you had a
8 choice, it would probably be a better idea
9 not to put those two things close together.
10 It would just seem intuitive that it would
11 be a bad idea to put them in close
12 proximity even if just putting a liner in
13 between them.
14 CHUCK HEAD: We do try to take a
15 good look at that and using the best
16 science we have available, we make those
17 decisions.
18 EARL TYLER: Okay. That's all.
19 Just a clarification on that one. The
20 other thing is if you're talking about
21 newly generated ash, that would not fall
22 under the grandfather rule from the new EPA
23 regs; right?
24 CHUCK HEAD: Let me try to answer
25 it this way. Newly generated ash from this

1 TVA facility if it's going to go off site
2 for disposal in a Tennessee permitted
3 landfill, it could go into an existing
4 landfill that's been approved to accept
5 that waste. So I'm not quite sure what
6 you're asking on your follow-up.
7 EARL TYLER: Well, in Craig's
8 presentation it was stated that a state
9 or federally required clean-up beginning
10 prior to the effective date of the new
11 regulations would be grandfathered, that
12 anything that was already happening could
13 continue but would not be subject to the
14 new regulations. But I'm saying newly
15 generated ash is not -- would not be part
16 of an ongoing cleanup, so it would be
17 subject to the rules; correct?
18 CHUCK HEAD: There are three
19 things. Let me try to chase it this way.
20 EARL TYLER: Okay.
21 CHUCK HEAD: We have proposed rules
22 that have been put out for public comment
23 by EPA for how coal combustion residue can
24 be managed under the Subtitle D option
25 which is what we call a Class 1 or a

1 municipal landfill-type setting and then
2 there's a Subtitle C option which is
3 basically a hazardous waste landfill.
4 Those are not in place yet in our
5 state or anywhere in the nation. So what
6 we would do here in Tennessee is look at
7 what we have currently in place. So we
8 have landfills that are currently in
9 operation and if they are currently in
10 operation and they've been permitted in
11 that -- in their process to accept coal
12 ash, it could go there, and some of these
13 landfills would not have a liner. Now, if
14 they were taking it to a Class 1 landfill,
15 which is our municipal landfill, then that
16 does have a liner.
17 Now, if a landfill wants to take
18 that material and they want to create a new
19 cell to store it into, then they have to
20 submit a plan to us and that landfill has
21 to have the clay liner and the synthetic
22 liner. Or if somebody wants to build a new
23 landfill to take this material, it has to
24 have that.
25 So in our state there is, I guess

1 what I would call, a bit of a grandfather
2 clause for material going into existing
3 landfills but not to new landfills or to
4 expansions of landfills.
5 EARL TYLER: Now, would you suggest
6 that also grandfathered in would be
7 existing applications?
8 CHUCK HEAD: No.
9 EARL TYLER: Okay. So an
10 application that is pending your action
11 would be subject to the new rules if they
12 come out before you get done?
13 CHUCK HEAD: Well, they're already
14 subject to our rules. We require a liner
15 for a new landfill or expansion of a
16 current landfill.
17 EARL TYLER: Okay. That's all on
18 that and I appreciate that. Secondly -- or
19 thirdly, I think that the way you guys are
20 going sounds good to me, that TVA is doing
21 a good job to keep control of its own waste
22 and keep it where it can take care of it
23 and have a plan rather than have it spread
24 out where it can become a problem for lots
25 of people in lots of places. I know that's

1 not popular with some people, but it sounds
2 good to me.
3 BRUCE ENGELBERT: All right. We
4 still have a little bit of time. Are there
5 any other people who would like to ask a
6 question or make a comment?
7 GENE SAGE: Gene Sage again. I
8 had to step out of the room. If you've
9 answered this, well, then just say so. Any
10 of the byproducts of future coal burning,
11 are you going to use any of that in the
12 cement mixture that's going to build this
13 new perimeter boundary? Because I
14 understand gypsum or something can be mixed
15 with cement to make it stronger and it is a
16 building product.
17 STEVE MCCRACKEN: In truth, it's
18 not something that we've really thought
19 about at this point. I think that the --
20 what we're going to be doing -- and, in
21 truth, I wouldn't expect to use it for this
22 specific application that we're going to do
23 at our site. However, we are still --
24 we're doing a pilot test. We're trying to
25 do that to really design the right mixture

of materials that will give us the best fix. We can certainly discuss that, but at the moment we haven't even thought about that.

GENE SAGE: Thanks.

STEVE SCARBOROUGH: I'm Steve Scarborough. I'm with the CAG. I just wanted to mention that the CAG does have meetings regularly that the public is invited to. Some of these questions are going to be ongoing as we move forward. You know, we kind of view this as a done deal. We aren't particularly happy with the solution in the respect that it does not have a liner. However, I think the other aspects of it, you know, are pretty substantial and whether it's going to be good or bad depends on how well it's monitored and how much we pay attention going forward.

So the next CAG meeting is on Thursday, June 10. The website is roanecag.org and you can go there. We have a calendar and we post links to other communications from TVA and you can

1 contact us if you have special
2 consideration on this.
3 The only question that I have has
4 to do with monitoring. You know, I think
5 going forward, you know, I accept that you
6 guys are trying to monitor things pretty
7 well and I think it's going to be a matter
8 of trust, you know. Does the public trust
9 the information that you give us. What I
10 would like to ask is that you include some
11 oversight body or take someone with you
12 outside of TVA, outside of EPA, and outside
13 of TDEC.
14 There are a number of volunteer
15 organizations that would be willing to
16 accompany you on testing and take a look at
17 stuff. You know that I've been critical of
18 your testing methodology in the past and
19 times when you have not tested that you
20 know contaminants are in the river and the
21 data has been misrepresented.
22 So going forward I would like to be
23 able to trust everything that I see and the
24 data that we get. So is there -- can you
25 give us some consideration that you could

1 add something to what you're doing so we
2 can build this trust back up? Because, you
3 know, it's all going to be about -- if
4 you'll make the remedy great, if a problem
5 happens, we don't want to -- well, you
6 know, we were trusting you and we got in
7 this position in the first place. So we'd
8 like some additional help and oversight
9 there. Thanks.
10 LEO FRANCENDESE: Thanks, Steve.
11 In addition to the EPA and TDEC and TVA,
12 there's been a very strong initiative to
13 involve NGOs, or non-government organi-
14 zations. TVA recently held a symposium
15 yesterday. I can't remember all the names,
16 but there were some prominent universities
17 there, Old Dominion, Vanderbilt. Was
18 Vanderbilt one of them? NC State, Duke was
19 there and there was a couple of others.
20 That's not just one group. They're having
21 an additional symposium.
22 So what we tried to do with that
23 group out of this growing request for NGO
24 participation is to establish a common
25 scientific framework where they have the

1 bells and the whistles in the business,
2 where they have a QAPP plan, where they
3 meet the lab standards, where there's
4 audits that take place, where there's split
5 sampling that takes place so that they can
6 all converse on the same level with the
7 same quality of data.
8 So I think what you're asking for,
9 TVA is already in the process of heading in
10 that direction. And I'll be here for the
11 next three to six months. I'll continue to
12 push for that and I'm pretty sure that
13 Craig is also headed in the same direction.
14 So the answer is, yes, it's trying to be
15 put together.
16 STEVE SCARBOROUGH: Can we get that
17 commitment from TVA?
18 CRAIG ZELLER: It's in the process,
19 yes.
20 BRUCE ENGELBERT: Any other people
21 who -- I'm sorry. So, Steve, if you want
22 to conclude.
23 STEVE MCCRACKEN: I would like to
24 make one last comment. I think that it's
25 trying to address the frustration that I

1 think I heard from Mr. Topmiller and I
2 think your name was Mr. Mathis and Don.
3 And that is what we will try to do
4 continually is to make it better. Don,
5 we're going to try to get out of the river
6 so that we won't be sitting out in front of
7 your house anymore and we're going to do
8 that very soon. We will continue to do
9 those things that we can to make this work,
10 not just better for the community as a
11 result of what we have done, but during the
12 course of the work. That's a commitment
13 that we can and should make.
14 I don't know exactly what that
15 means. I mean but we'll keep looking for
16 things that we can do in that regard.
17 BRUCE ENGELBERT: All right. Well,
18 thank you, Craig, for your presentation and
19 all of the panelists and thank you for
20 coming and sharing with us the thoughts and
21 concerns that you have. There are TVA and
22 EPA people who are going to be here for the
23 next half hour as long as you're here and
24 want to talk. So, please, come up and talk
25 to them and get more information. Thank

1 you, everybody.
2 (Meeting concluded.)
3 (Public Comment From Reporter's
4 Table)
5 JASON JENKINS: My concern is about
6 the skimmer booms not being lit. I'm not
7 sure. I'm getting the runaround from --
8 nobody knows who actually put them out and
9 everybody -- nobody knows who put them out
10 or who is responsible for keeping them lit
11 or if they even by law have to be lit.
12 But I've talked to the Coast Guard and I've
13 talked to TVA and neither one of them seem
14 to be able to give me any answers.
15 I hit one with my boat. When I
16 took mine to have it repaired, my boat
17 repaired, several other people had had
18 theirs repaired that had done the same
19 thing I had done, had hit them either late
20 in the night or early in the morning at
21 dusk or dawn or after dark because they're
22 not lit. Normally anything out in the
23 water like that, whether it be a buoy or a
24 bridge or whatever, it has to be lit or
25 have a reflector on it.

1 I've not been able to get TVA or
2 Crawford and Company to address my claim.
3 They are just blowing me off and it's been
4 over a year now and they still don't have
5 the money to pay for repairs to my boat or
6 talk about trying to get it lit so it won't
7 happen to somebody else.
8 Luckily, there wasn't anybody
9 seriously injured in ours. We went from
10 40 miles an hour to a dead stop in a matter
11 of feet and it was like being in a car
12 wreck. It almost threw her out of the boat
13 and it threw me into the windshield and we
14 had bumps and bruises, but it could have
15 been a lot worse. My big concern is safety
16 more than it is getting my boat repaired,
17 but my insurance will take care of it.
18 Anyway, it's more of a concern that
19 you don't want anybody else being hurt or
20 whatever than it is trying to get my boat
21 paid for. If that's something anybody can
22 find out for me, let me know.
23 - - -
24
25

1 REPORTER'S CERTIFICATE

2

3

4 STATE OF TENNESSEE:
COUNTY OF HAMILTON:

5

6 I, Tracy A. Beamon, Certified Court Reporter and Notary Public, do hereby certify that I reported
7 in machine shorthand the May 20, 2010, Meeting in the above-styled cause; that the foregoing pages, numbered
8 from 1 to 122, inclusive, were typed under my personal supervision and constitute a true record of said
9 proceedings.

10 I further certify that I am not an attorney or counsel of any of the parties, nor a relative or
11 employee of any attorney of counsel connected with the action, nor financially interested in the outcome of the
12 action.

13 Witness my hand in the City of Chattanooga, County of Hamilton, State of Tennessee, this 16th day
14 of June, 2010.

15

16 Tracy A. Beamon, CCR-1003
My Commission Expires on the
17 12th day of February, 2011.

TRACY A. BEAMON
STATE OF TENNESSEE
NOTARY PUBLIC
HAMILTON COUNTY

18

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