

PERCHED WATER, MOTOR POOL POND AND
CHEMICAL EVAPORATION POND PROPOSED PLANS

IDAHO FALLS, IDAHO

July 20, 1992

6:30 p.m.

SPEAKERS

Lisa Green, DOE-IDAHO
Nolan Jensen, DOE-IDAHO
Joe Gordon, DAMES & MOORE
Randy Bargelt, EG&G IDAHO
Dave Hovland, DEQ
Dave Frederick, STATE OF IDAHO
Linda Meyer, EPA
Peter Sinton, DAMES & MOORE

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1 IDAHO FALLS, IDAHO, MONDAY, JULY 20, 1992, 6:30 P.M.

2
3 MS. GREEN: I would like to welcome
4 everyone to tonight's meeting. We are glad you
5 were able to make it tonight, and we look
6 forward to a very productive meeting.

7 My name is Lisa Green. Tonight
8 I'll be serving in a dual role. First, I'll be
9 acting as moderator for the meeting. As
10 moderator my task is to help us move through the
11 agenda in a timely manner and make sure that
12 everyone who wishes to has an opportunity to
13 participate.

14 The other role I will be playing
15 tonight is as the remedial project manager for
16 DOE-Idaho. As the remedial project manager,
17 I'll be helping to answer your questions on the
18 project. I'll try to indicate specifically
19 those times when I'm acting in the DOE role;
20 otherwise, I'll be in the moderator position.

21 There are several desired outcomes
22 for this meeting tonight. First is to gather
23 public comment on the No Action proposed plans
24 for the three projects that are on the agenda.

25 The proposed plans are projects

1 that are at that stage where DOE, EPA and the
2 State have developed a technical recommendation
3 for how to proceed, and we're taking comments
4 from the public before a final decision is made
5 on how to proceed at a particular site.

6 Input received during the public
7 comment period of this meeting and written
8 comments will be used by the agencies to
9 evaluate their recommendation and to come to a
10 final decision on each of the three sites.

11 The second desired outcome is to
12 give you an opportunity to ask questions and
13 inform you about the details of these three
14 proposed plans and how they fit into the broader
15 scope of DOE's cleanup activities at the INEL.

16 So basically we're here to listen
17 to each other tonight. Take a moment to look at
18 the agenda that you received when you entered
19 the room tonight. As you can see, we have three
20 topics on tonight's agenda.

21 The first topic of the proposed
22 plan is the Perched Water System at the Test
23 Reactor Area. Following the presentation on
24 that topic, we'll have a question and answer
25 session to clarify any information you may want

1 to have explained in greater detail.

2 After we have answered all your
3 questions, we then will take time to hear your
4 verbal comments on the Perched Water Proposed
5 Plan. Those will be comments for the official
6 record for that project.

7 After a short break, we'll move to
8 the second part of tonight's meeting and discuss
9 proposed plans for the Motor Pool Pond at the
10 Central Facilities Area and the Chemical
11 Evaporation Pond at the Auxiliary Reactor Area.

12 Due to the similarity between these
13 two projects, the technical presentation and
14 questions and answers and the comment portion of
15 the meeting of these two proposed plans have
16 been combined. We did this in response to a
17 number of public comments we received requesting
18 that we try to combine similar topics when it's
19 possible.

20 At this time I would like to
21 introduce two individuals who are in the
22 audience. The first is Reuel Smith, who is the
23 INEL community relations plan coordinator. This
24 is also probably a good time to mention that the
25 public comment period on DOE's Community

1 Relations Plan has been extended to September 1,
2 1992. That plan establishes a process to help
3 DOE communicate environmental restoration
4 information to the public and help the public
5 communicate back to DOE on those issues.

6 So if you have any issues related
7 to the Community Relations Plan in general, you
8 want to talk with Reuel, he is your man. So you
9 have a couple hours here to corner him and ask
10 him questions.

11 The second person I would like to
12 introduce is Mike Coe. Mike, would you please
13 stand. Mike is with the INEL public affairs
14 office. So if you have any questions or
15 comments that are outside the scope of these
16 three proposed plans, you can see Mike at the
17 break or following the meeting and he'll be
18 happy to talk with you about those other issues.

19 So after each of the two
20 presentations, questions may either be submitted
21 in writing using the note cards you found on
22 your chair when you came in tonight, or if you
23 prefer, you can use the microphone, which will
24 be brought up front here. We use the note cards
25 for a couple of reasons. First, the cards allow

1 the respondents a few seconds to think about the
2 questions before they respond. Second, some
3 members of the audience may not prefer to come
4 up and use the microphone.

5 After each question and answer
6 period there will be an opportunity for you to
7 provide comments on the proposed plan for agency
8 consideration. This comment period is the
9 official comment period for putting verbal
10 comments in the record. Comments will be
11 evaluated for the final decision and any
12 responses to those comments will be made
13 available.

14 How to make the comments? As I
15 mentioned earlier, one of the purposes of this
16 meeting is to give you an opportunity to make
17 your thoughts known to the agency. If you
18 choose not to do so at the meeting or if you
19 wish to submit additional comments in writing
20 after you've given your verbal comments, the
21 address of where to send written comments is on
22 the back side of your agenda. If any of you
23 have brought prepared statements here which you
24 would like to have included in the meeting
25 record and responded to in the Responsiveness

1 Summary, you may read them during the verbal
2 comment segment of the meeting or give them into
3 a tape recorder that we have set up in the back
4 of the room, or give your prepared statement, if
5 you have it written down, to Reuel Smith at the
6 back table and that comment will be incorporated
7 into the record.

8 A tape recorder is also available
9 for anyone who would like to make a verbal
10 comment but would rather not do so in front of
11 an audience. In addition, you'll find on the
12 back table there are comment forms in three
13 colors, one color for each of the three
14 projects. You can fill out a form tonight and
15 leave it with Reuel at the back table or you can
16 mail it in later.

17 Written and verbal comments are
18 given equal weight in consideration of the final
19 decision and both are responded to in the
20 Responsiveness Summary.

21 Reuel, how many people have signed
22 up at this point to make verbal comments here
23 tonight?

24 MR. SMITH: It looks like on the
25 sign up sheet we didn't have a column if they

1 have prepared comments. We might just ask the
2 audience to get an indication of those that have
3 attended tonight.

4 MS. GREEN: We have one person.

5 AUDIENCE MEMBER: What do we
6 comment on?

7 MS. GREEN: We haven't started the
8 specific topics yet. These are the general
9 ground rules for the meeting. You'll have the
10 opportunity to comment on each of the three
11 projects later on.

12 Is there anybody here who knows
13 that they would like to make verbal comments?
14 One, two, three, okay. If that's not the final
15 tally, you are able to change your mind anytime
16 before the oral comment segment for that project
17 that you're interested in.

18 In general, if there is a heavy
19 request for making comments, we will limit
20 comments to five minutes for the verbal comment
21 session. The comment period for these three
22 projects runs through August 5th, 1992. So you
23 have until August 5th to provide your comments
24 on each of those three projects. .

25 What happens to your comments after

1 you have made them? After the comment period
2 has ended, DOE prepares a summarization of both
3 oral and written comments that we've received
4 during the period. The three agencies then
5 respond to comments that are relevant to each
6 topic in a document called the Responsiveness
7 Summary.

8 Again, verbal and written comments
9 are given equal consideration, and that
10 Responsiveness Summary becomes part of the
11 Record of Decision for each topic and it will be
12 sent to INEL information repositories and to
13 everyone who has signed the attendance register
14 at the back table. Everyone who submits written
15 comments or provides an address will receive the
16 document.

17 We have a court reporter here
18 tonight to transcribe the meeting. To help the
19 court reporter, please everyone take the few
20 moments that it takes to come to the microphone,
21 otherwise the court reporter may not capture
22 what you have to say for the record.

23 Also each time you come to the
24 microphone, be sure to repeat your name. I
25 believe, Reuel, the name requirement is

1 associated with your formal comments, right?

2 MR. SMITH: Yes.

3 MS. GREEN: If you're just coming
4 up during the question and answer period, we
5 don't need your name.

6 Now, that I have said my piece
7 here, let me introduce the agency
8 representatives that are up here with me. To my
9 far right is Dave Hovland with the Division of
10 Environmental Quality. He works for the State
11 of Idaho. And to my near right is Linda Meyer,
12 who works for the EPA Region 10. I will give
13 both of them an opportunity to make a few
14 opening remarks here. In the interest of not
15 showing proper etiquette, Linda elected to speak
16 after Dave.

17 MR. HOVLAND: As Lisa said, I'm
18 Dave Hovland. I'm the State's INEL technical
19 manager, I work in Boise, Idaho. I'm also the
20 WAG manager for the TRA. That's one of the
21 proposed plans that we're presenting tonight.

22 I would like to introduce a couple
23 of key State employees. My counterpart in Idaho
24 Falls is Shawn Rosenberger standing over there.

25 Two of Shawn's staff are going to

1 be presenting information or representing the
2 State on the other two proposed plans. The
3 first one is Dave Frederick. Dave is the CPA
4 manager. The other one is Tom Stoops. They
5 both work in Idaho Falls. Tom is the ARA
6 manager.

7 I would like to say that the State
8 supports the three proposed plans, and we very
9 much encourage public comment on the plans.
10 After the public comment is completed, we will
11 evaluate and address all public comments and
12 prepare a Record of Decision for all the three
13 sites that we're talking about tonight.

14 MS. MEYER: I'm Linda Meyer with
15 the Environmental Protection Agency. I'm also
16 the WAG manager for the Test Reactor Area.
17 Howard Blood, who is in the audience here, is
18 the project manager for ARA and CPA.

19 Basically, I want to emphasize two
20 important points that Dave made, and that is
21 that these decisions have not been made and your
22 participation and input is an important part in
23 our process. So we need your comments to help
24 us complete the decision process. So please
25 voice your concerns, we're interested in your

1 input.

2 MS. GREEN: Thank you. With that
3 introductory note, let's move right into the
4 presentation of the Perched Water System at the
5 Test Reactor Area. I'll turn things over to
6 Nolan Jensen, who is the DOE project manager for
7 the Perched Water System.

8 MR. JENSEN: Now, with that long
9 introduction, I had plenty of time to get very
10 nervous. Again, like Lisa mentioned, we're
11 going to be talking about three different
12 projects at the INEL tonight. Specifically
13 about the proposed plans. There are copies on
14 the back table, they are all in the same packet.

15 But the three projects that we're
16 going to be talking about tonight are the
17 Perched Water System at the Test Reactor Area,
18 the Motor Pool Pond at the Central Facilities
19 Area, and the Chemical Evaporation Pond at the
20 Auxiliary Area.

21 Let me just quickly show a
22 photograph of each one. This is the Test
23 Reactor Area, and I'll show you this photograph
24 again in a few minutes, but this is essentially
25 east, north and these are the Waste Water Ponds.

1 This is the Warm Waste Pond that we talked about
2 a year ago.

3 This is a photograph of the Motor
4 Pool Pond. That's this area right here at the
5 Central Facilities Area. This is a photograph
6 of the Auxiliary Reactor Area, and this is the
7 Chemical Evaporation Pond right here, the
8 greenish area.

9 So those are the three projects
10 that we're going to be talking about in very
11 general terms. The first thing I want to do,
12 though, I think one of the hardest things there
13 is for us is getting this information in such a
14 concise manner so we can help you understand
15 what we're talking about and the reasons for the
16 recommendations. So what I'm going to try to do
17 in the few minutes is just briefly go over the
18 process that we follow in coming to this
19 recommendation.

20 As you know, we're doing this under
21 the Superfund Law, these cleanups and
22 investigations. Under the Superfund Law, when a
23 site in the United States is thought to pose a
24 potential risk to human health and the
25 environment, it is placed on the National

1 Priorities List. The INEL was placed on the
2 National Priorities List at the end of 1989, in
3 December of 1989. Once a site is placed on that
4 list, then under the law it is required that
5 investigation be done on those sites to find out
6 if they pose an unacceptable risk.

7 That investigation process is
8 called a remedial investigation, and those
9 investigations have been done on each of the
10 three projects that we'll talk about tonight.

11 The remedial investigation -- not
12 that the components are very difficult to
13 understand, it's just when we do an
14 investigation we answer a couple questions.
15 Number one, what kind of contaminants are out
16 there? And then a more key question, what kind
17 of risk do they pose?

18 Once that investigation is done and
19 we've evaluated the risk, then we go into your
20 decision making process on if something should
21 be cleaned up, and if so, how it should be
22 cleaned up. We call that the decision making
23 process. And the first part of that is as soon
24 as the agencies come to a consensus on the
25 recommendations for a site then we come out for

1 public comment to get the public's view on
2 recommendations and see if there are concerns or
3 things that we need to take into consideration
4 when the final decision is made.

5 Once the decision is reached, it is
6 documented into a document called the Record of
7 Decision. Then once that Record of Decision is
8 reached, the decision is implemented.

9 Let me just take another couple
10 minutes and explain just a little bit more about
11 the remedial investigation process. As I said
12 earlier, there are two key components of the
13 remedial investigation. The first one is
14 characterization, going out taking samples,
15 finding out what is out there, what kind of
16 contaminants are there at the site. Then once
17 that is found out and it is determined what
18 level of contamination some hypothetical person
19 could be exposed to, then a risk assessment is
20 done, calculations are done with those
21 concentrations and that is used to determine
22 what risk is posed by that site.

23 So in a nutshell, that's the
24 general process that we're talking about here
25 tonight and has been done for each of these

1 sites.

2 Now, just to give a quick overview
3 on what is considered to be an acceptable risk.
4 This whole process is defined in what is called
5 the National Contingency Plan. That is the
6 regulation plan, the Code of Federal Regulation
7 that implements the Superfund Law. In the
8 National Contingency Plan there is a risk range
9 that is defined.

10 The first one that I'll talk about
11 is for a potential cancer-causing chemical or
12 contaminant. What the National Contingency Plan
13 states is that if a risk is found to be in
14 excess of this risk range, which is one
15 potential incident of cancer in 10,000 to one in
16 one million, if it's above that range it is
17 considered to be unacceptable. If it's within
18 that range or below it, it's considered to be
19 acceptable. That's for carcinogenic risk.

20 For non-carcinogenic risks, for
21 toxic-type risks that is something like, for
22 example, a contaminant may cause some health
23 effect like high blood pressure, rashes or some
24 organ damages like liver or kidney-damage or
25 something like that, then there is a value

1 called a hazard index that is established. What
2 that says is that if we're less than one then
3 there is clearly no unacceptable risk posed, and
4 one point to make on this, if it's also less
5 than one that considers sensitive populations,
6 like infants. So if we're less than one, we're
7 very comfortable that there is no unacceptable
8 risk at the site. Above one, then we need to
9 start looking at the risk and determining if the
10 cleanup is necessary.

11 Also one thing that someone
12 mentioned that I should point out here, on the
13 carcinogenic risk, just for a reference point,
14 and that is the national average for incidence
15 of cancer is up in this range, up in here
16 somewhere.

17 AUDIENCE MEMBER: What is the
18 meaning of that "one"? Is that one death per
19 USA or one death per year?

20 MR. JENSEN: This one?

21 AUDIENCE MEMBER: Yes. What is the
22 units on that?

23 MR. GORDON: That's a hazard index.
24 I'm Joe Gordon from Daxes & Moore. The one
25 means that the value that was calculated out at

1 the site is compared to what is regarded by EPA
2 and other internationally recognized committees
3 as the threshold value, and those two values are
4 compared and if their ratio is one, then that
5 means they are equivalent.

6 MS. GREEN: So there is no unit on
7 it?

8 MR. GORDON: Right, it's a unitless
9 quotient.

10 AUDIENCE MEMBER: That means one
11 possibility of an adverse effect for how many
12 people?

13 MR. GORDON: No, this is for
14 non-carcinogenic toxic effects. So the "one"
15 means that the two values were equivalent,
16 because they are divided by each other.

17 AUDIENCE MEMBER: It doesn't tell
18 us anything about risk, in other words?

19 MR. GORDON: No

20 AUDIENCE MEMBER: Thank you.

21 MR. JENSEN: Okay. That was a very
22 quick overview of the process that we go through
23 to determine if a site poses an unacceptable
24 risk. So maybe since we had one question, if
25 there are any other quick ones before we go on

1 just on the processes that we're following.

2 AUDIENCE MEMBER: Where is the
3 uncertainty calculation for the hazard index in
4 your displays of the hazard index?

5 MR. GORDON: Is the question where
6 is the uncertainty in the hazard index?

7 AUDIENCE MEMBER: Where is it
8 treated in your presentation of the hazard
9 index? Is the one ratio with the uncertainty
10 incorporated in the calculation?

11 MR. GORDON: Yes.

12 AUDIENCE MEMBER: A question of
13 format. It seems to be a legalese term to say,
14 "No unacceptable risk." Can't you just say, "An
15 acceptable risk?" I find that in the reports on
16 all three of these you come up with the double
17 negative, which I find confusing to many of the
18 people.

19 MR. JENSEN: Good point. That's
20 just the way it's been done.

21 AUDIENCE MEMBER: It is most likely
22 an EPA term.

23 MR. JENSEN: I don't know if I can
24 blame that on EPA or not, I really don't.
25 That's the way we've done it, and that's the

1 message we're trying to get across is that we
2 didn't find a risk to be unacceptable.

3 What I'm going to do now is spend a
4 couple minutes talking about -- oh, wait, I
5 wasn't done.

6 Now I want to explain for a minute
7 how this agreement is set up between the
8 agencies. We are doing these investigations
9 under what is called the Federal Facility
10 Agreement and Consent Order. It's an agreement
11 between the Department of Energy, the Idaho
12 Department of Health and Welfare and the
13 Environmental Protection Agency.

14 The way this agreement was set up,
15 since the INEL is a large complex with several
16 different facilities and a lot of different
17 things to look at, the National Contingency Plan
18 talks about dividing large complex sites into
19 what is known as operable units. So you can
20 look at it in a bite size way of looking at it,
21 I guess.

22 So what was established -- and I
23 don't know if you noticed, but when people were
24 introduced, they were introduced as WAG
25 managers. Well, that stands for Waste Area

1 Group, and the INEL has been divided into ten
2 Waste Area Groups. Nine of them are essentially
3 the different facilities out at the INEL. The
4 WAG 10, Waste Area Group 10 is, I guess it kind
5 of fills in all but the holes in the Swiss
6 cheese, it is everything else, the miscellaneous
7 sites, and it's also a key part of the Waste
8 Area Group 10. That's when a final evaluation
9 will be done on the Snake River Plain Aquifer
10 for the entire INEL.

11 Once the Waste Area Groups were
12 established -- still that's a lot of different
13 things to look at in each one of those Waste
14 Area Groups, so the Waste Area Groups were then
15 further divided into what we're calling operable
16 units. Just to show you the three operable
17 units that we are talking about tonight are
18 these, Waste Area Group 2 is the Test Reactor
19 Area and so forth.

20 So what happens then as we go
21 through this process? We look at individual
22 contaminants sites. Three of those we will be
23 talking about tonight. Then after we look at
24 each of the smaller units, then there will be an
25 evaluation done, a comprehensive evaluation done

1 at each of the Waste Area Groups. Then once the
2 evaluation is done at each of the Waste Area
3 Groups, that then is rolled up into this
4 comprehensive WAG 10 remedial investigation,
5 which will be done focusing on the Snake River
6 Plain Aquifer and looking at cumulative effects.

7 So I guess the idea here is that we
8 are -- you have to look at all the little pieces
9 in order to be able to roll them up and look at
10 the cumulative impacts.

11 Now on to the Test Reactor Area.
12 The first one we're going to talk about tonight
13 is the Perched Water System at the Test Reactor
14 Area. It's Operable Unit 2-12. Specifically,
15 what this investigation was focused on was
16 looking at the perched groundwater beneath the
17 Test Reactor Area -- and I'll talk about that in
18 a minute -- in finding out what the effects of
19 that perched water is on the aquifer. Does that
20 perched water pose a risk on the aquifer that is
21 unacceptable?

22 Here is another photograph of the
23 Test Reactor Area. What happens is, as I
24 pointed out earlier, there is a series of
25 wastewater ponds to each side of the Test

1 Reactor Area. This is the Warm Waste Pond
2 again, this is the Cold Waste Pond right here,
3 we'll be talking about that in a few minutes.
4 But as wastewater comes out of the facilities at
5 the Test Reactor Area, it is placed into these
6 ponds. This is the sewage right here, water
7 that comes out of the sewage treatment plant.
8 But as wastewater is put into these ponds, it
9 seeps into the subsurface. As it goes down it
10 encounters layers in the subsurface, layers of
11 sediment that are relatively impermeable. The
12 water doesn't pass through them as quickly as it
13 does the other layers.

14 So what happens is it encounters
15 these layers, it slows the water enough so it
16 perches or it mounds over those layers. And
17 under each of these ponds there are two general
18 perched water bodies, under each of the
19 individual ponds at about 50 feet there is a
20 small body of perched water that forms. Then as
21 it seeps through that one at about 150 feet
22 there is another layer of relatively impermeable
23 sediments that slows it, so it creates this
24 larger perched water body at about 150 feet and
25 then the top of the Snake River Plain Aquifer is

1 about 480 feet in the area of the Test Reactor
2 Area.

3 So essentially what we're talking
4 about is do these two bodies of water, as they
5 seep through the subsurface and reach the
6 aquifer, is that going to cause a problem?

7 This is the larger body. Again, as
8 I mentioned, each of the ponds has a smaller
9 body of perched water beneath it, if there is
10 water going into the pond, but then they reached
11 that lower 150 foot level and this is the
12 outline, approximate outline, of that deep
13 perched water body.

14 These little black dots all over
15 this photograph show the monitoring wells that
16 are installed. They are installed at different
17 depths. Some of them go to the aquifer, some of
18 them go down to the deep perched water, some to
19 the shallow. But this is basically where we got
20 the information to do this investigation risk
21 assessment.

22 Again, the questions that we're
23 answering with this investigation are: What is
24 out there? And this photograph, again, kind of
25 shows this is where we got the information to

1 find out what is out there. Now we need to
2 answer the question: Okay, now we know it's
3 there, how bad is it? What I'm going to do now
4 is turn the time over to Joe Gordon from Dames &
5 Moore who conducted the risk assessment
6 calculations for this project. Joe.

7 MR. GORDON: Thank you, Nolan.
8 This diagram is supposed to be a representation
9 of the risk assessment process. The first step
10 in the risk assessment is to evaluate the data
11 and identify which contaminants might be a
12 concern at the site, and then this data is
13 applied essentially in two parallel pathways
14 here. One is to look at the toxicity of the
15 contaminants, both from a carcinogenic and
16 non-carcinogenic standpoint, then to perform an
17 exposure assessment, which involves how the
18 water and contaminants move through the soil,
19 and then the intake by humans and ecological
20 receptors. Then those two parallel paths are
21 pulled together at the end during the risk
22 characterization where you combine the total
23 intake with the dose response.

24 The data that was obtained during
25 the site characterization is screened down to

1 identify those contaminants, which are thought
2 to contribute to more than one percent of the
3 risk at the site. So that way we can focus the
4 risk assessment on those contaminants that
5 really are going to drive the risk. The
6 contaminants that are shaded in here are the
7 ones that turned out to dominate the risk.

8 Then in the exposure assessment, we
9 developed an exposure scenario in which we have
10 a hypothetical on-site resident farmer who goes
11 out and lives out at the Test Reactor Area,
12 installs a well directly below the Perched Water
13 System in the Snake River Plain Aquifer,
14 irrigates his crops, feeds his livestock, eats
15 the crops, livestock, and consumes all his water
16 from that well.

17 In addition, we evaluated
18 non-human ecological receptors. We have looked
19 at vegetation. We evaluated vegetation by
20 looking at the uptake of groundwater. We looked
21 at herbivores through the consumption of
22 groundwater, direct contact with soil and
23 ingestion of groundwater. Then we looked at
24 carnivores through all the same pathways with
25 the addition of ingestion of animals out at the

1 site.

2 To do this we constructed a
3 groundwater model. The purpose of the
4 groundwater model was to predict the flow of
5 contaminants and water from the Perched Water
6 System to the Snake River Plain Aquifer over
7 time. One of the findings of the groundwater
8 modeling exercise was that the deep perched
9 water body would completely disappear within
10 seven years of the shutdown of the Cold Waste
11 Pond.

12 So the bottom line here was that
13 the risks of carcinogenic contaminants out at
14 the site 125 years in the future were one in 179
15 million, which you see is well into the
16 acceptable ranges. In addition EPA, in their
17 evaluation of the risk assessment, calculated
18 when would a hypothetical resident be able to
19 live out there and receive an acceptable risk?
20 And we calculated that could be in the year
21 2000, which we show is ten years there.

22 The hazards were also calculated
23 and also found to be in the acceptable range for
24 both the ten and 125 years scenarios.

25 So in summary, there currently are

1 no risks from perched water out at the site
2 since the site is restricted. And for an
3 on-site resident farmer living at the site, the
4 risk would fall within the acceptable range
5 within ten years.

6 So I guess with that I'll turn it
7 back over to Nolan.

8 MR. JENSEN: Just in summary here,
9 based upon the results of the investigation, the
10 contaminants that were found to be there and the
11 concentrations that were found to be there and
12 the results of the risk assessment, it was
13 determined that this site -- can I say poses an
14 acceptable risk?

15 AUDIENCE MEMBER: I would hope so.
16 Thank you.

17 MR. JENSEN: However, given the
18 fact that this is based on a computer model and
19 concentrations that are predicted by that model,
20 we're going to go ahead and monitor that system
21 to make sure that the predictions that we made
22 with that modeling effort are accurate.

23 So what this says is we're not
24 planning on going out and doing cleanup, we
25 would recommend that that not be done; however,

1 we would recommend that this monitoring be done
2 and that a periodic review, which would be
3 conducted by the agencies, meaning the
4 Environmental Protection Agency and the Idaho
5 Department of Health and Welfare, that that
6 would be done periodically just to assure that
7 the assumptions are correct, that the
8 predictions we made are correct and that the
9 recommendation that we made is correct.

10 So with that, I will turn the time
11 back to Lisa to moderate the question and answer
12 period.

13 MS. GREEN: Before we go on to
14 general questions and answers on the TRA Perched
15 Water, are there any specific questions on this
16 presentation while we have Nolan under the
17 spotlight here that you might want to ask him
18 specifically?

19 With that, we'll open it up to the
20 general question and answer session on the TRA
21 Perched Water Project.

22 Please pass your note cards to the
23 end of the aisle so that Reuel and Erik Simpson
24 can collect them. If you have additional note
25 cards that you want collected during the

1 session, please raise your hand. We'll begin
2 with the note cards to get things rolling here,
3 then the respondent will read the question out
4 loud and after reading the card, if there is
5 some clarification required of the questions, he
6 or she will ask for clarification.

7 If the panel's answer to a question
8 may lead to another question which you would
9 like to ask, feel free to follow up questions
10 either at the microphone or using another note
11 card, whichever you prefer. For those of you
12 who do come to the microphone, out of fairness
13 to the panelists and everybody else here, if you
14 would please ask one question at a time so we
15 can be sure that all your questions are
16 answered. We'll take the first question.

17 AUDIENCE MEMBER: Blain Holman from
18 Pocatello. I have a question on page A-7 of the
19 TRA plan here, there are some mean concentrations.
20 In strontium-90 it appears to be a little
21 different because at the aquifer mean
22 concentration in 1990 it's .0019, then the
23 predicted aquifer concentrations for 125 years
24 is .29. I was just wondering why that is. Is
25 strontium special? Are the numbers mixed up or

1 what is the maximum concentrations of strontium
2 between the two ranges or is it ever greater
3 than .29?

4 MR. JENSEN: This is Peter Sinton.
5 He was the one that did the computer modeling
6 work. Rather than say something incorrect, I
7 will let him take the time.

8 MR. SINTON: Strontium is not
9 special. It actually peaks at an earlier year.
10 It comes up to a higher value than you see, but
11 there is a higher value in between. I don't
12 know exactly where it ends up but that is pretty
13 close to what it is.

14 AUDIENCE MEMBER: Is that --

15 MR. SINTON: Not necessarily, it's
16 not much higher than that. It's not significantly
17 higher than that.

18 AUDIENCE MEMBER: It's on the
19 downswing now.

20 MR. SINTON: Yes.

21 AUDIENCE MEMBER: I have a
22 question.

23 MS. GREEN: Is this for the risk
24 assessor while he's up here?

25 AUDIENCE MEMBER: Yes. Can you

1 explain why it would increase at all from its
2 present value?

3 MR. SINTON: It increases because
4 it's absorbed in the sediments beneath the Warm
5 Waste Pond, and it moves a little bit slower
6 than some of the other contaminants like
7 chromium or tritium, and so it does come through
8 at a later time since it's moving slower.
9 That's why it is predicted to come up a little
10 bit later on.

11 AUDIENCE MEMBER: I see. Then
12 where is the measuring point in this aquifer?
13 It must be well downstream from where the
14 downflow -- from where it's entering then.

15 MR. SINTON: Actually, it's not.
16 It's very close actually to where the Warm Waste
17 Pond is. I believe that would probably be the
18 concentration that is indicative of several of
19 the wells that are right below the Warm Waste
20 Pond.

21 MR. GORDON: One clarification
22 point is that these are predicted values, these
23 are not measured values, so this is a predicted
24 concentration directly below the Perched Water
25 System.

1 AUDIENCE MEMBER: Does that value
2 take into account the decay factor for
3 strontium?

4 MR. SINTON: It takes into account
5 the decay in the water.

6 AUDIENCE MEMBER: Why does the
7 strontium move slower?

8 MR. SINTON: Strontium moves
9 slower because atoms have characteristics,
10 specific characteristics, so when they come into
11 contact with soil, each of them behaves slightly
12 differently. Strontium-90 in this case moves
13 slower than tritium.

14 AUDIENCE MEMBER: Because it's
15 absorbed in soil?

16 MR. SINTON: Yes.

17 MS. GREEN: The additional answer
18 was because it absorbs in soil. We need to try
19 to use the microphone, please, if you don't have
20 a loud voice, or use a note card.

21 AUDIENCE MEMBER: The reason I
22 asked that is on page A-6, the second column,
23 second paragraph, you define mean values. The
24 question gets back to: Over what area was the
25 aquifer value of mean concentrations determined?

1 MR. SINTON: At the black dots that
2 you saw on the one slide, all of the wells that
3 are shown on here, these black dots, some of
4 them are in the deep perched zones, some are in
5 the Snake River Plain Aquifer. None of these
6 wells are in the shallow perched zone, which
7 Nolan talked about that little bubble. These
8 are all either in this bigger potato-shaped
9 thing or down in the Snake River Plain Aquifer.
10 These wells were the ones that were used to
11 determine or to estimate the mean aquifer
12 concentrations. Some of them do not have any
13 detect values, like for americium, there is no
14 detect in the Snake River Plain Aquifer. So
15 there is really no measurable amount of
16 americium down there.

17 Do you have anything you want to
18 add?

19 MR. GORDON: No, the only thing I
20 would add is that it's basically -- you're
21 asking about the Snake River Plain Aquifer? The
22 three wells at the top, I believe, are the ones
23 that are in the Snake River Plain Aquifer, which
24 were not used as part of that mean. Those are
25 upgradient wells, these three right here.

1 MS. GREEN: Any other questions?

2 AUDIENCE MEMBER: Are you still
3 modeling the flow in the aquifer as though it
4 were homogeneous flow, or is that a flow in a
5 homogeneous medium as opposed to piping and
6 channeling?

7 MR. SINTON: The flow in the
8 aquifer was not -- well, it was considered in
9 the model, but not considered as a key focus in
10 the model. That is, we looked at modeling
11 concentrations from the ponds down to the Snake
12 River Plain Aquifer, so we didn't look at
13 transport away, if you will. The answer is yes
14 it was homogeneous, but it wasn't the focus of
15 the model.

16 MS. GREEN: That was because the
17 risk was assessed at the point directly beneath.
18 It wasn't assessed down gradient, so that
19 wouldn't be a factor in the risk assessment.

20 That was my DOE hat, by the way.

21 Any other questions? Note cards,
22 Reuel?

23 MR. SMITH: I don't have any cards.
24 Peter, I just wanted to say would you like to
25 join the table up here.

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MR. SINTON: Sure.

AUDIENCE MEMBER: This question is for the State. We're told that monitoring of the Perched Water System and Snake River Plain Aquifer as well as periodic reviews will be conducted by EPA and Idaho Department of Health and Welfare, and details for development of the proposed monitoring plan and criteria for termination of the reviews will be outlined in the Record of Decision.

At a briefing in Pocatello, which was not attended by either one of the regulatory agencies, we did ask that that plan be available before the Record of Decision, and the State of Idaho's representative said that an attempt would be made to have that plan available this evening. Is it available?

MR. HOVLAND: Could you let me know who that was?

AUDIENCE MEMBER: It was Dean Nygard.

MR. HOVLAND: I wasn't at the meeting.

AUDIENCE MEMBER: We had a speaker phone.

1 MR. HOVLAND: I can tell you that
2 we're working towards developing a plan right
3 now and we're going to be meeting with EPA and
4 DOE and various consultants to develop all the
5 parameters and all the details of that plan.

6 So I can tell you we are developing
7 it. The actual plan is not due until 21 days
8 after the Record of Decision is signed as per
9 the agreement, but we are developing it through
10 time.

11 AUDIENCE MEMBER: Well, my
12 understanding from the Pocatello briefing was
13 that the people attending the briefing, at
14 least, had been assured by the State of Idaho
15 that the monitoring plan would be available
16 before the end of the public comment period.
17 Thank you.

18 MR. HOVLAND: You had mentioned
19 basically that it would be available tonight,
20 which is something that I'm not aware of.

21 AUDIENCE MEMBER: But there is a
22 difference between tonight and 21 days after the
23 Record of Decision.

24 MR. JENSEN: Do you want me to add
25 a little to that?

1 MS. GREEN: Nolan was on the
2 telephone end of that technical briefing.

3 MR. JENSEN: I don't remember the
4 exact promises. I do know we talked about the
5 fact that it will be done by the Record of
6 Decision. And I guess one of the things that is
7 considered here, until we get comfortable, some
8 comfort that this is, you know, the right
9 recommendation, we're not going to go clear into
10 the development of that thing.

11 But basically what we have done,
12 and today, in fact, Dave and Linda today have
13 spent some time with Peter on talking about what
14 questions that monitoring should answer, which
15 wells. We have come up with a recommendation
16 that there are about ten of these wells that
17 probably should be monitored.

18 Another question here, by the way,
19 is what periodic monitoring at TRA perched water
20 means, does that mean once a year, once a decade
21 or what? What is going on there is, I guess,
22 the first question is every once in a while or
23 routinely under another law, RCRA monitoring is
24 done on a quarterly basis, every three months.
25 Peter, in fact, did some statistical looking at

1 how often that does need to be done. Does it
2 make a difference if you do it quarterly or
3 bi-annually?

4 So what we're doing right now is
5 discussing what is the right frequency? How
6 often should these reviews be done? The
7 National Contingency Plan also talks about five
8 year reviews, at least every five years, so that
9 would be the minimum. One of the things that
10 needs to done during that review is not only
11 just monitoring the water, but like we said,
12 we're planning on the TRA Warm Waste Pond being
13 gone next year. They are replacing it with a
14 new lined pond. So one of the first things that
15 needs to be done is come back in, say, a year or
16 two, and look and make sure that that pond is
17 gone and evaluate that. So there is more than
18 just the aquifer that needs to be looked at.

19 Did that give you an idea?

20 AUDIENCE MEMBER: Well, I guess I
21 still don't know when the monitoring plan will
22 be available to the public. And maybe the
23 answer is the monitoring plan will not be
24 available.

25 MR. JENSEN: Dave and Linda talked

1 about that we need to have that fairly well
2 established by the time the Record of Decision
3 is out. Whether the actual plan will be out by
4 then, I don't know. We really haven't got that
5 far.

6 MR. HOVLAND: I can tell you that
7 I'll certainly talk to Dean to see what his
8 intent was in his discussion with you on the
9 call. If you can leave me a phone number so I
10 can get back to you. Basically, this week we're
11 going to be out at public meetings all week so
12 I'll be able to call you next week at the
13 earliest.

14 AUDIENCE MEMBER: If I may, to
15 follow up on Beatrice's comment. The very title
16 of the paper that you sent out in the mail to us
17 is the proposed plans for monitoring the Perched
18 Water System at the Test Reactor Area.

19 So I can understand why there is a
20 lot of interest in what this plan will be. But
21 that will not be part of any discussion as I
22 understand it with the public. That's the
23 impression I'm getting tonight.

24 MS. GREEN: If I can put on my DOE
25 hat again. At this point in time that's

1 correct. I guess there is always room for
2 public comment on the project regarding the
3 availability of that plan for public review.
4 I'm not exactly sure how it would fit into a
5 legal process.

6 MR. HOVLAND: As I mentioned
7 before, the scope of work for a monitoring plan
8 is due 21 days after the ROD is signed. And
9 like Linda and Nolan have mentioned, we're
10 basically putting together that plan now and
11 evaluating different options for the type of
12 monitoring, the type of contaminants that would
13 be appropriate, but it is a key part of this and
14 we're developing it right now.

15 AUDIENCE MEMBER: What groups
16 currently monitor this area? What constituents
17 do they monitor for it, and what periods does
18 this monitoring occur at?

19 MS. GREEN: Nolan, can you address
20 that?

21 MR. JENSEN: You should have just
22 told us. You probably know better than anyone.

23 Basically, the aquifer is monitored
24 by several individuals. EG&G is monitoring at
25 the Test Reactor Area from the standpoint of are

1 the drinking water wells producing clean water.
2 That is done under the Safe Drinking Water Act.
3 As most of you are aware, I think, the
4 U.S. Geological Survey does an independent
5 monitoring of wells all over the INEL. And TRA
6 is one of the areas that they are looking at
7 right now, as well as going back and looking at
8 some of the old monitor wells and making sure
9 that the wells are still adequate monitoring
10 devices and things like that.

11 So the USGS is doing it, and then
12 the State INEL Oversight office is doing
13 monitoring out at the INEL. So there are
14 several groups who do monitoring especially of
15 the aquifer in general. But this monitoring
16 would be specific to answering the questions of:
17 Is this decision or recommendation that we're
18 making, were the assumptions correct? Were the
19 predictions correct? And we may use data from
20 that other monitoring to answer that question.

21 AUDIENCE MEMBER: To be a little
22 more specific, the majority of the wells
23 completed in the perched water, in the deep
24 perched water are sampled either semi-annually
25 or quarterly, and a small fraction of them

1 annually, and the wells pictured -- the dots
2 illustrated that are in the aquifer, they are
3 either monitored semi-annually or quarterly or
4 for some wells on a monthly basis. So all
5 wells, generally all the dots illustrated are
6 currently part of the monitoring programs, which
7 do look for tritium and which do look for
8 chromium and also do look for strontium-90. So
9 it is being monitored. Like the USGS monitoring
10 that there is really no end in sight for the
11 monitoring program.

12 MR. JENSEN: One of the things we
13 might consider is to just use that USGS data.
14 If we look at that data, and we believe that
15 that is adequate data for our purposes, then
16 maybe we would work out some system where the
17 USGS would make sure that they get the samples
18 that we need when they do their monitoring or
19 something like that.

20 But first of all, we have to decide
21 what we think is right to do and then we'll look
22 at the best way to implement that. USGS could
23 be part of that implementation.

24 AUDIENCE MEMBER: Where are the
25 State's samples analyzed?

1 MR. HOVLAND: Are you referring to
2 the Oversight monitoring?

3 AUDIENCE MEMBER: I presume the
4 gentleman here, Mr. Jensen, alluded to the fact
5 that the State was getting samples.

6 MR. HOVLAND: That's right. I'll
7 let Flint answer that. Flint is part of the
8 INEL Oversight Group, which is a different State
9 group than the group than I'm in, the Division
10 of Environmental Quality.

11 MR. HALL: The monitoring that he's
12 referring to is a couple of what you might call
13 one-time shots, which might lead into -- based
14 on what our sampling showed, might lead into
15 some longer term investigations. The analyses
16 for radionuclides that we will be conducting
17 from samples I'm currently preparing myself,
18 those analyses will be done at Idaho State
19 University's radiological lab and chemical
20 analyses will be done at the State lab.

21 MS. GREEN: Any other questions?

22 AUDIENCE MEMBER: Is that Idaho
23 State Lab in being or is that being proposed?

24 MR. HALL: The plan is an
25 investigation at first and it is composing the

1 project plan. There is a previous sampling of
2 last fall in which I personally sampled
3 production wells and sampled them for several
4 constituents, tritium as well as volatile
5 organics. And the inorganic parameters, I
6 conducted that sampling again last fall, and
7 that involved a production well at TRA, which is
8 completed in the aquifer. And the sampling plan
9 for this fall is still planned. It hasn't
10 occurred yet, but it is a project that I'm
11 working into more of a background investigation,
12 not just looking specifically at those wells,
13 just to see what values are there rather than
14 looking at those wells to come up with a
15 qualitative decision, qualitative look at how
16 that perched water affects the groundwater and
17 how it affects, specifically, the majority of
18 the wells pictured on this diagram that are in
19 the aquifer.

20 AUDIENCE MEMBER: That doesn't
21 answer my question, though. Suppose a person
22 draws a water sample tomorrow and takes it down
23 to the University, can you analyze it within a
24 week?

25 MR. HALL: Well, it depends on how

1 many samples he's working on. He can take a
2 tritium sample, and for one individual tritium
3 sample it would take nearly a 24-hour period to
4 analyze.

5 AUDIENCE MEMBER: Fine, but the
6 laboratory is in being, on line, working?

7 MR. HALL: It's working.

8 MR. HOVLAND: I might add that any
9 State sampling at the INEL goes through a very
10 detailed QA/QC review by an internal committee.
11 The internal committee has representatives from
12 the State lab and various programs of the State.

13 Basically, we do that because not
14 only do we want to make sure that the quality
15 assurance project plans are appropriate for the
16 type of sampling that the State is doing out
17 there, but we also want to make sure -- and we
18 do periodic reviews of laboratories for the
19 intended analytical work that Flint is talking
20 about. So basically it's a program that ensures
21 that the data quality objectives are being met
22 under the proposed sampling plans.

23 AUDIENCE MEMBER: I guess my
24 question still comes back to the hardware, and
25 not to committee work.

1 MR. HALL: Yes, the lab at the
2 University of Idaho does exist and has been in
3 operation and has proven itself to be very
4 reliable. And additionally the people involved
5 in running that lab are -- hadn't realized until
6 recently how well thought of in the scientific
7 community they are. So it is an established
8 lab. It is a lab that has been in operation for
9 several years, and it is a lab that has been
10 shown to produce very good results.

11 MS. GREEN: Any other questions?

12 AUDIENCE MEMBER: Do you mean Idaho
13 State University?

14 MR. HALL: Yes, he just corrected
15 me. It's Idaho State University. I get
16 confused since I have been at both of U of I and
17 Idaho State for education. I mix them all
18 together. But yes, Dr. Bern Graham of the
19 College of Pharmacy is at Idaho State
20 University. And they also produce a periodic
21 report that is sent to the State to detail their
22 monitoring and their work and their quality
23 assurance.

24 MR. JENSEN: I have a question on a
25 card, and that question is: How much did the

1 Remedial Investigation cost as a rough estimate?

2 A little over a million dollars.

3 If we included DOE and the State and EPA, total,
4 a million and a half, something like that.

5 MS. GREEN: Does that include,
6 Nolan, the work sampling done under COCA or is
7 that since the FFA/CO was signed?

8 MR. JENSEN: That's from our cost
9 account with EG&G over the last year and a half.
10 So if you consider the evaluation of the
11 sampling done before that, who knows, maybe two
12 million, something like that.

13 MS. GREEN: Lois has been on this
14 project for a couple years. Lois VanDeusen
15 works for EG&G. Do you have a better feel for a
16 total project cost?

17 MS. VANDEUSEN: I think Nolan is
18 right, there was about \$800,000 spent before and
19 he's right on the numbers.

20 MS. GREEN: Thank you, Lois.

21 Any other questions before we begin
22 the official comment period here?

23 AUDIENCE MEMBER: I have a question
24 on the table. I was curious about Chromium,
25 that is, under the table it indicates the

1 aquifer.

2 Can you guys hear me?

3 MS. GREEN: Could you please come
4 up to the microphone so everybody can hear.

5 AUDIENCE MEMBER: I just had a
6 question on the table A-7. Chromium is listed
7 as exceeding the drinking water standards under
8 the aquifer in 1990, and we just had reports
9 about how frequently the aquifer is studied, and
10 to get on to my question which was: What are
11 the numbers that are coming out of there, not
12 out of the model, but out of the recent
13 laboratory studies, perhaps at ISU they are
14 coming out quarterly, what is the most recent
15 sample that indicates the aquifer concentration
16 of chromium at this point, and not mean, but
17 peak, and then did that reconcile appropriately
18 with the model? It's two years old in the
19 program.

20 MR. SINTON: It sounds like there
21 is more than one question here.

22 AUDIENCE MEMBER: First of all, is
23 there any data available at this point about
24 what, as this gentleman raised about the
25 frequency of the studies and lab analyses that

1 are turned in on chromium, are we talking about
2 in 1990? I guess I was curious as to what the
3 results are now, the most recent quarterly
4 reports on chromium. What it peaked at and did
5 that reconcile with the model in question?

6 MR. SINTON: I can't speak to
7 concentrations right now. I haven't seen any
8 recent data.

9 MS. GREEN: You developed --
10 correct me if I'm wrong, I'm putting my DOE hat
11 on again here -- you developed -- or inputs to
12 the model based on historical data up to that
13 date; is that correct?

14 AUDIENCE MEMBER: Up to 1990?

15 MR. SINTON: That's correct, up to
16 1990.

17 AUDIENCE MEMBER: What good is it
18 to get this data quarterly if they are not
19 available now and how are they getting fed back
20 into your model to reconcile appropriately? For
21 all we know here today, the model needs to be
22 upgraded today to reflect the aquifer
23 concentration, for example, chromium, which
24 already exceeds the drinking water standards by
25 48 micrograms per liter in 1990.

1 MR. SINTON: One way to answer that
2 is: Well USGS-65, which has been a well that
3 has been quite indicative of concentrations in
4 the shallowest part of the Snake River Plain
5 Aquifer, the concentrations of chromium and
6 tritium have been decreasing steadily and that's
7 a statistically significant decreasing trend.
8 That trend is independent of any model or
9 simulated decrease. And I can't speak for
10 present day, but the model predicts the same
11 sort of decrease with time and at the same order
12 of magnitude in the same range, and so without
13 knowing what the data is for 1992, I would say
14 it's probably predicting that decrease that I
15 would expect to see right now.

16 AUDIENCE MEMBER: Would you say
17 then that given the fact that you reported that
18 all of those concentrations, like the chromium,
19 for example, and tritium decreased in
20 concentrations since 1990, perhaps you're aware
21 I have all the chemical constituents listed
22 which decreased or, for example, are some of
23 them increased since 1990, and did it reconcile
24 with the model?

25 MR. SINTON: I'm trying to break

1 this down into subparts. One of the
2 contaminants of concern predicted by the model
3 was cadmium. We don't have a complete
4 historical record on cadmium concentrations in
5 the aquifer. It is one of the contaminants that
6 increases over time, then decreases later on,
7 because as like strontium-90, it moves slower
8 than some of the other contaminants. So at this
9 point the model doesn't necessarily reconcile
10 historically with that particular contaminant of
11 concern. We don't have a complete record for
12 it, but for tritium and chromium, which are two
13 very good indicators of how rapidly contaminants
14 move in the environment and give us some measure
15 of certainty, we have good agreement with the
16 model and the observed values.

17 Does that answer your question?

18 AUDIENCE MEMBER: I think so.

19 Thank you.

20 MS. GREEN: We had another hand
21 over in this side of the room.

22 AUDIENCE MEMBER: This gentleman's
23 question brings up another one to my mind. I'm
24 wondering since the chromium in the deep perched
25 zone is responsible for contaminating the

1 aquifer, how can the aquifer concentration be
2 higher than the deep perched zone on this table?

3 I'm comparing page A-7, b and c, so
4 with dilution, which you have on -- this 5,000
5 foot front of water moving past the wells should
6 provide dilution and the mean aquifer should be
7 lower than the deep perched mean concentrations.

8 MR. SINTON: For chromium, most of
9 the chromium discharge occurred in the early --
10 I don't remember the exact time periods for
11 chromium discharge, but it was discontinued a
12 number of years back, I believe in 1972, but I'm
13 not sure. This is the reason that the
14 concentration in the deep perched zone is
15 smaller than that in the aquifer. The chromium
16 is moving through as a front or a slug, if you
17 will, and in the aquifer the highest
18 concentration has actually already gone past and
19 is now decreasing, but it's still higher than
20 what is in the deep perched zone. So the
21 chromium that is mobile has moved through the
22 deep perched zone in the
23 aquifer and is now dissipating in the aquifer.

24 Was that clear?

25 AUDIENCE MEMBER: Physically I

1 can't visualize it.

2 AUDIENCE MEMBER: Peter, you might
3 want to mention it's being diluted by the Cold
4 Waste Pond, which is free of chromium. In other
5 words, that water is moving to the Perched Water
6 System.

7 MR. SINTON: That is another aspect
8 of it. The Cold Waste Pond, which does not have
9 chromium in it, that particular water does not
10 have chromium in it. The chromium in the deep
11 perched zone is being diluted by the discharge
12 to the Cold Waste Pond and has been since 1980.
13 So that's another reason why that concentration
14 is smaller than that in the aquifer.

15 MS. GREEN: Do we have any other
16 questions before we take oral public comment?

17 Nolan has a card with three
18 questions on it.

19 AUDIENCE MEMBER: The first one is:
20 Has the model been validated with anything less
21 than 1990 data -- or anything since 1990?

22 MR. SINTON: Not since 1990 data,
23 no. It's been a while since that was done.

24 MR. JENSEN: The best I can do on
25 that is in the meetings we had on the project,

1 USGS has been in on those and Larry Mann
2 basically has made the statement that, yeah.
3 That's kind of weak, I guess.

4 MS. GREEN: If I can put my DOE hat
5 on again, this project was started a year or so
6 ago and so that would have been 1991 right
7 there, and there is generally a time line
8 between getting the data reported and when it's
9 collected, and a lot of times it's easily a
10 year between when the USGS samples and when they
11 report their data. That could be a factor
12 between the apparent time line or so.

13 Back to being a moderator, any
14 other questions?

15 MR. JENSEN: The next one is: How
16 was the method of validation performed?

17 MR. SINTON: Can I ask for what
18 you're looking for in terms of validation? Are
19 you talking about calibration or validation?

20 AUDIENCE MEMBER: Validation. But
21 it falls back again, 1990 data that was used to
22 generate the model; is that correct?

23 MR. SINTON: No, actually the 40
24 years of data for chromium and tritium, the 40
25 years of data that was collected since the

1 beginning of the site operations.

2 AUDIENCE MEMBER: What you have up
3 to that point was used for generating the model?

4 MR. SINTON: That's correct.

5 AUDIENCE MEMBER: And it has not
6 been looked at since that time with more recent
7 data?

8 MR. SINTON: That's correct.

9 MR. JENSEN: The last question on
10 this card is: Are additional wells being
11 considered under the proposed monitoring
12 program?

13 All I can say on that is we did not
14 propose to the EPA and the State that we install
15 additional wells for this monitoring. Again, we
16 haven't reached a conclusion on that so I
17 wouldn't dare say that we made a decision.

18 MS. GREEN: Any other questions?
19 Reuel, I can see your hand waving.

20 AUDIENCE MEMBER: On the risk
21 assessment, why did you use -- looking at
22 someone who lived at the site for 30 years,
23 rather than 70? We're always told in Pocatello
24 that we can live with the smoke stacks at FMC
25 for 70 years and I kind of thought that was some

1 sort of special number.

2 MR. GORDON: They are all magic
3 numbers. The 30 years is the 90 percentile of
4 how long someone lives at one residence. So
5 it's a value that's typically used and generally
6 accepted throughout the risk assessment
7 community.

8 AUDIENCE MEMBER: So EPA doesn't
9 use 70 years?

10 MR. GORDON: No. This is the
11 reasonable maximum exposure. Seventy years used
12 to be used to calculate the maximally exposed
13 individual under an old guidance.

14 AUDIENCE MEMBER: But we don't use
15 70 years anymore, we use 30?

16 MR. GORDON: Right, 30.

17 MS. GREEN: Any other questions or
18 cards?

19 AUDIENCE MEMBER: If no one else
20 wants to jump in here, I will take a stab at it,
21 although I'm not in risk assessment by trade.
22 I'm Howard Blood from EPA. I have the other two
23 projects that are being discussed here tonight.

24 I think the concept that was
25 presented, but perhaps not clearly expressed, on

1 hazard index, which is the non-carcinogenic
2 risk, which is one that is difficult only
3 because it's presented differently than the
4 cancer risk. The hazard index is based on what
5 is called a reference dose. A reference dose is
6 a dose that has been established as the dose
7 that even a sensitive individual in the
8 population could be exposed to on a continuing
9 basis and demonstrate no adverse effect. So
10 when we do our comparison to what concentrations
11 we find at the site, we compare the two numbers
12 and that gives us that unit less hazard index.
13 And that unit less hazard index essentially
14 compares the concentration found at the site to
15 the concentrations that have been established as
16 creating no adverse effects. So if you have a
17 higher concentration than that, you're going to
18 get a number greater than one.

19 If you have a concentration less
20 than the reference dose, then obviously you fall
21 on the other side of one and it's a clear
22 decision.

23 Now, the hard part, I think, is the
24 part that was brought up, I think in a comment
25 from someone sitting behind me, about where do

1 you insert the uncertainty on that? The
2 uncertainty comes before we develop, or as we're
3 developing the reference dose. So those numbers
4 have just as much uncertainty in them as, for
5 example, the cancer risk numbers, although that
6 doesn't perhaps come through as clearly. Does
7 that make it clearer or did I manage to muddy
8 things up completely?

9 AUDIENCE MEMBER: I assume you mean
10 the maximum dose that causes no effect? Not
11 just any dose.

12 MR. BLOOD: Where you go is when
13 exposure studies are done, they look for a
14 breaking point, it's called the No Observed
15 Adverse Effect Level. That means that we can
16 feed that to you and you never show any adverse
17 effects, and that's the number that we go for.

18 Now, obviously a lot of these
19 studies are done on other species, so at that
20 point the decision has to be made how you
21 extrapolate from animal data to human data.
22 Usually we do that by adding safety factors so
23 that the number is extremely conservative when
24 we get to a point where it's a public reference
25 dose.

1 The other thing that I would like
2 to mention, I think Beatrice has raised the
3 question of the monitoring plan, and I think
4 it's just as important to make sure that
5 everyone recognizes that the monitoring plan,
6 even though this is a No Action, is part of the
7 response that is based on the No Action
8 decision. And we don't have a No Action
9 decision at this point. We have a No Action
10 recommendation.

11 Therefore, EPA is willing to
12 discuss and come to some conceptual approach to
13 this, but we don't recommend or sponsor or
14 encourage extensive design on this, because if
15 as a result of public comment, we choose a
16 different remedy, then any effort that would
17 have been put into that monitoring plan may have
18 been an inappropriate effort since we didn't
19 have a commitment to go that way. So that's an
20 important concept to keep in mind on proposed
21 plans.

22 MR. HOVLAND: However, I still will
23 chat with Beatrice on the break to clarify her
24 questions to get back to what she envisioned
25 would be available tonight at the public

1 meeting.

2 MS. GREEN: Thank you, Howard and
3 Dave.

4 AUDIENCE MEMBER: I would like to
5 ask whether the EPA modeling, which seems to
6 focus on doses to individuals and the dose
7 responses for individuals, if there is any
8 attempt to model concentration in the food chain
9 prior to a whole population dose and any attempt
10 to model population responses?

11 MR. GORDON: Are you asking -- I
12 can't figure out exactly which question you're
13 asking. Are you asking do we model the food
14 chain to evaluate the population dose or is
15 there an attempt to --

16 AUDIENCE MEMBER: What we have here
17 is a situation where the aquifer is being
18 gradually contaminated by industrial strength
19 dumps and it's being used down aquifer for
20 agriculture and for culinary purposes and there
21 is great potential for large scale, low level
22 exposure to things that are put in the aquifer.
23 We all drink the water from the aquifer. We all
24 use things that are grown in the aquifer, and
25 the cattle all eat alfalfa that is grown with

1 pumped water from the aquifer, et cetera.

2 We don't, however, drink the water
3 directly from the aquifer so much as receiving
4 things from the food chain that has the aquifer
5 for one of the primary sources of all of our
6 water. And the question is: Is any attempt
7 made to model what is really going on in
8 potential food chain concentrations and low
9 level exposure beyond what you can see in an
10 individual exposed to direct consumption of
11 these contaminants?

12 MR. GORDON: The risk assessment
13 that was performed for this site, for the
14 Perched Water System, was meant to answer the
15 question: Should we clean up the Perched Water
16 System?

17 Okay. The water in that deep
18 perched zone, there is roughly a billion gallons
19 there, should that water, does that pose an
20 adverse health effect to someone living out
21 there? What we did to model that was to --

22 AUDIENCE MEMBER: My question is
23 not to someone living out there, but to the
24 population living out there. It's a different
25 question, of course.

1 MR. GORDON: Well, the short answer
2 is no, population doses were not calculated for
3 the site. But I think to just carry that one
4 step further, the Snake River Plain Aquifer
5 itself will be evaluated in the WAG 10 risk
6 assessment when they do a site-wide Snake River
7 Aquifer evaluation.

8 MS. GREEN: If I can jump into that
9 response with my DOE hat on. The aquifer will
10 also be looked at for cumulative effects from
11 the Test Reactor Area in general under that WAG
12 2 comprehensive RI/FS. The concept under this
13 remedial investigation was to look at the risk
14 at close range at the unit, and with the logic
15 being that there is less risk further away from
16 the unit from the follow-up remedial
17 investigations at the TRA level than at the
18 WAG 10 level. I think we'll be addressing
19 cumulative risk that you're posing.

20 AUDIENCE MEMBER: To carry that
21 question a little further. In the investigation
22 that you did in assuming that the person living
23 at the TRA site some years hence gets all his
24 food from either livestock or vegetables grown
25 from water at that site, does that risk

1 assessment include the bioconcentration of
2 various elements from the water to the plants to
3 the animals to the person? Does that include
4 that bioconcentration?

5 MR. GORDON: Yes, it does.

6 AUDIENCE MEMBER: Does it include
7 the air contamination and other things?

8 MR. GORDON: The inhalation pathway
9 was not evaluated for the Perched Water System.
10 It was qualitatively evaluated at the beginning
11 and found not to pose a significant risk.

12 AUDIENCE MEMBER: I didn't mean
13 from that site, I meant from the whole.

14 MR. GORDON: No, this is only
15 supposed to answer the question about the health
16 impact of the Perched Water System and its
17 impact on the Snake River Plain Aquifer directly
18 below the site there.

19 MS. GREEN: Any other questions?

20 With that, we'll begin the portion
21 of the meeting designed for you to provide your
22 oral comments, oral testimony to the agencies
23 regarding the Perched Water Proposed Plan.

24 During this portion of the meeting,
25 the agencies will listen to your comments but

1 will not respond to them tonight. They will be
2 evaluated and then responded to in the
3 Responsiveness Summary for the Perched Water
4 Proposed Plan.

5 I'll remind you again that the tape
6 recorder is in the back and is available for
7 anyone who would like to record a comment not
8 directly in front of the audience here. If
9 someone makes a statement for which you would
10 like additional information in order to clarify
11 the comment, please be sure to ask the speaker
12 for that clarification. And the purpose of this
13 session is to make sure that the agencies
14 understand what the individual making the
15 statement is actually saying.

16 With that, Reuel, do we have any
17 other indication of additional people wanting to
18 make verbal comments here tonight on TRA Perched
19 Water?

20 MR. SMITH: No.

21 MS. GREEN: I'll ask for
22 volunteers, then. Start from the back to the
23 front is as good as any order, I guess.

24 AUDIENCE MEMBER: My name is Brian
25 Holman. My address is 310 East Center,

1 Pocatello. I am a native of Columbia, South
2 Carolina, and the Savannah River Site is a
3 familiar neighbor. For the past year, I have
4 been with the Natural Resources Defense Council,
5 where I spent a good deal of time focusing on
6 the Idaho Chemical Processing Plant and its
7 high-level waste. I am working with the Snake
8 River Alliance this summer and am speaking this
9 evening on behalf of its 1,200 individuals,
10 family and business members.

11 Over three years ago, the
12 Department of Energy promised to begin
13 environmental restoration at the Idaho National
14 Engineering Laboratory. Since that time, a
15 steady stream of nuclear waste has continued to
16 enter Idaho. Since that time, not a teaspoonful
17 of INEL contamination has been cleaned up.

18 In the meantime, government
19 agencies have effectively undermined their
20 promises for full public involvement in cleanup
21 decisions.

22 Certainly, on the surface there
23 appears to be a banquet of opportunities for
24 public involvement. We have meetings, one right
25 after the other on the Community Relations Plan,

1 proposed cleanup plans, the Site-Specific Plan.
2 We even hear there are some plans to start
3 scoping for a site-wide environmental impact
4 statement. There seems to be a whole lot of
5 planning going on.

6 There are agencies and departments
7 within agencies eager to tell us everything they
8 think we need to know about every plan. Draft
9 Records of Decisions, of course, remain secret.
10 Without prodding, the agencies wouldn't even
11 tell us the plan for monitoring groundwater at
12 the Test Reactor Area 125 years from now, even
13 though that's the proposed plan.

14 But all these meetings are in
15 reality, somewhat confusing, laborious and
16 redundant. They will ultimately frustrate and
17 exhaust the public. Whether intentional or not,
18 this balkanized approach to public involvement
19 serves mainly to dissipate public participation,
20 consuming time and energy of public interest
21 groups that might otherwise be spent on more
22 productive pursuits.

23 Why don't we regard these meetings
24 as productive?

25 Blurred in the seeming abundance

1 of opportunities is the fact that no process
2 yet exists that allows citizens to participate
3 or even be represented on the front end of
4 the decision making process. Agency officials
5 devise and present proposed solutions, the
6 public comments on these proposals, and then
7 the agencies decide what, if any, changes to
8 proposed actions will be taken in quote,
9 "response." While this process may occasionally
10 -- somewhere on earth -- lead to significant
11 alterations in a plan, it effectively precludes
12 the public from challenging the basic planning
13 premise.

14 One such premise set forth on page
15 A-9 of the Perched Water Plan is the notion that
16 the Department of Energy will retain control of
17 the Idaho National Laboratory for the next 125
18 years, 23 years longer than Idaho has existed as
19 a state. Who has decided the INEL will be there
20 for 125 years? Can they guarantee it? Did they
21 ask the people of Idaho? I doubt it. But the
22 people of Idaho just might see a pattern. Does
23 this projection mean that the Department of
24 Energy will be maintaining control over
25 high-level waste until the year 2117? Does that

1 constitute interim storage? Would the DOE have
2 taken such a long-range view when it put sodium
3 contaminated waste into single walled tanks, or
4 maybe it did.

5 What the people of Idaho need or
6 deserve is substantial process reform. First,
7 cleanup decisions cannot be left to the
8 bureaucrats and the technocrats alone. These
9 problems are social, not just technical.

10 Secondly, the people deserve an
11 honest commitment of accountability to help
12 restore citizen faith in the DOE. Citizen input
13 should be welcomed and used, not tolerated and
14 then ignored.

15 Third, full disclosure of the
16 environmental and health concerns, risks and
17 hazards at the INEL is needed immediately.

18 Beyond substantial process reform,
19 cleanup needs to proceed along a rational
20 policy. The current patchwork of INEL cleanup
21 policies is woven by inter-agency politics and
22 inevitably warped by the DOE efforts to retain
23 functions related to nuclear weapons in Idaho.
24 We believe an honest analysis of the
25 environmental, health and economic issues

1 involved in cleanup should include the
2 following: First, no more waste should be
3 allowed into Idaho. Secondly, on-site waste
4 production should be reduced to the maximum
5 extent possible. Third, on-site contamination
6 should be handled rationally along these lines:
7 First, imminent threats should be dealt with
8 immediately, such as possible leaking high-level
9 waste tanks. Secondly, mobile waste should be
10 kept from spreading. Third, interim actions
11 should only be used to reduce risk without
12 significantly complicating future remediation.
13 And finally, someone needs to ask the people of
14 Idaho what the final cleanup standards should be
15 and what they want the INEL to ultimately look
16 like. Thanks.

17 MS. GREEN: Do we have anybody else
18 who would like to made a verbal comment?

19 AUDIENCE MEMBER: John Tanner from
20 Idaho Falls. I believe that DOE had made a
21 sensible decision not to spend money attempting
22 to clean up or somehow purify a body of water
23 which is going to disappear within a few years
24 after they cease adding to it. That would
25 certainly waste -- spending money on that would

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1 certainly detract from any cleanup that we may
2 find later really does need to be done.

3 AUDIENCE MEMBER: Dennis Donnelly,
4 Pocatello. I would like to ask you to please
5 clean up the contaminants in the perched water.
6 I think that strontium and americium and cesium
7 are exactly what we do not want to see in the
8 Snake River Plain Aquifer. Thank you.

9 AUDIENCE MEMBER: My name is Bruce
10 Schmalz. I was involved in the early work up
11 until 1970, and I'm a retired citizen at this
12 point. I am impressed with the logic that has
13 gone into the recommendation, and I concur with
14 it and I have expressed such in writing.

15 However, something else has caught
16 my attention tonight, which is this figure of
17 \$2 million. And in coming to that figure, I'm
18 also impressed with the staff that's been
19 presented here, many of which are managers,
20 which I presume means other people besides those
21 that are present. And in developing this
22 recommendation, I find that in spite of all this
23 staff, resident staff, State staff, EPA staff,
24 we ultimately have to go down to Dames & Moore
25 to get some developments of the recommendation,

1 and that work I'm impressed with too. A fine
2 report it seems to me.

3 But I guess after the past week and
4 I see this matter of cost and change, government
5 expenditure, deficit reduction, balanced budget,
6 I guess my comment is in response to the
7 previous speaker as an example, it seems to me
8 that if spending money is the solution, we have
9 an overkill. And in my estimation I don't
10 expect an answer, I know what the answer is, and
11 to repeat myself, I don't expect an answer or a
12 response. Just a comment.

13 MS. GREEN: Anybody else who has
14 not provided an oral comment who would like to
15 step up to the microphone and provide one?

16 AUDIENCE MEMBER: My name is
17 Beatrice Brailsford, 310 East Drive, Pocatello.
18 And I'm testifying this evening as an
19 individual.

20 Earlier this week we had a briefing
21 on this plan in Pocatello, which I did think was
22 kind of a breakthrough. The community in
23 Pocatello has not been sought out very much by
24 the people who are doing cleanup at INEL.

25 The briefing was a little strange.

1 However, we had one person from the Community
2 Relations portion, I guess, Reuel works for EG&G
3 Idaho. We had an employee of EG&G giving a
4 presentation and then on the phone we had a
5 plethora of regulators who were unable to make
6 the 48 mile drive to Pocatello. That made me
7 very angry, because, of course, one of the
8 reasons I was excited by the IAG was that there
9 would be someone in the front of the room
10 besides the DOE and its contractors. That
11 evidently is only held for special events.

12 In the future, I would like to see
13 the briefings continued, but I would like to see
14 the regulators actually attend. One of the
15 regulators assured me that he understood public
16 involvement. I doubt deeply that he does.

17 I would like to talk about two
18 things that occurred at the briefing. One,
19 again, focuses on that fairly loaded statement
20 on page A-9. First, it was assumed that a
21 125-year period elapses before individuals
22 occupy the site. I asked a DOE person who, of
23 course, I cannot recognize here tonight because
24 it was on a speakerphone, if that statement
25 meant that the Department of Energy was planning

1 to maintain institutional control of INEL for
2 125 years, and the answer was, quote, "yes," and
3 quote. I think you have to check around.

4 That was certainly a good deal of
5 the discussion and the scoping meeting for the
6 cleanup PEIS was how long would DOE maintain
7 institutional control at the site? It seems to
8 me to fly -- in the 125-year time period, it
9 seems to me to fly in the face of common sense.
10 I think we'll have contamination there in 125
11 years, but I don't think that we can absolutely
12 assume for the purposes of planning that the DOE
13 will be there 125 years from now to control that
14 contamination. Again, I really do think that
15 that is a decision that Idahoans must be
16 involved with, not DOE.

17 Now, I would like to focus again on
18 the statement on page A-10. Monitoring of the
19 Perched Water System and Snake River Plain
20 Aquifer as well as periodic reviews will be
21 conducted by EPA and the Idaho Department of
22 Health and Welfare. Details for the development
23 of the proposed monitoring plan and criteria for
24 termination of the reviews will be outlined in
25 the Record of Decision.

1 I asked the representative of the
2 State, Dean Nygard -- and again he was not
3 present, he was on a speakerphone -- if he
4 understood that we would like to see details of
5 that monitoring plan before the Record of
6 Decision. Dean said he understood that, and
7 went further to say that perhaps details could
8 be available for us here tonight where the
9 regulators were as opposed to Pocatello where
10 the regulators weren't.

11 Now, I find that no discussion,
12 evidently, that occurred in that briefing
13 between a citizen of Idaho and an employee of
14 Idaho went beyond that speakerphone. So what
15 good was the briefing to begin with? Why did
16 they have to put themselves out to the extent of
17 sitting in a room in Idaho Falls? And why did I
18 have to put myself out to the extent of sitting
19 in a room in Pocatello and talking over the
20 airwaves evidently about nothing?

21 So here tonight when I asked again
22 about the monitoring plan and its availability,
23 I was told it would be available -- where here
24 it says, quote, "Will be outlined in the Record
25 of Decision." Evidently maybe it will be

1 floating there somewhere 21 days after the
2 Record of Decision. You know and I know that
3 there is no access for public involvement short
4 of fairly elaborate administrative or legal
5 steps which Howard Blood was not even willing to
6 tell us about the last time we tried to bring up
7 what happens if we're not happy with the Record
8 of Decision.

9 So we're left approving a plan that
10 we don't even know about yet. You know, maybe
11 we're going to use USGS status, maybe we are
12 going to use ISU data, maybe in 125 years we'll
13 all be so old that it won't matter anyway.

14 I understand that this is difficult
15 for regulators. I understand that this is
16 difficult for the agencies that cause the
17 contamination in the first place, but that
18 contamination was caused exactly by this sort of
19 thing that, hey, we're in charge and we're going
20 to be in charge for a century and more and don't
21 bother us, we'll put it in a file somewhere and
22 you need not look it over, all you have to say
23 is yes.

24 I encourage you to continue to have
25 briefings in Idaho towns. I encourage you to

1 continue to do meaningful efforts of public
2 involvement, but if you're going to have
3 meetings that are nothing more than late night
4 bullshit sessions, then it's not worth it.

5 Thank you.

6 MS. GREEN: Would anyone else care
7 to make a verbal comment?

8 AUDIENCE MEMBER: John Moran. I'm
9 a retired site worker, and I continue to be an
10 environmentalist. You've heard tonight quite a
11 broad spectrum of comments. If you would like
12 to categorize what my comments are going to be,
13 they are going to be at an extreme. You might
14 even use the "L" word; I'm a liberal.

15 I endorse the TRA Perched Water
16 System Proposal as well as the other two
17 proposals to be discussed tonight. The No
18 Action recommendations represent a realistic,
19 logical and common sense approach to the
20 management of very low levels of chemical and
21 radioactive contaminants 50 feet or more below
22 the surface in an environment of the basalt and
23 sagebrush desert.

24 I trust, though, as Mr. Schmalz
25 mentioned earlier that a baseline risk

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1 assessment of this magnitude will not be
2 necessary for similar levels of low level
3 contamination now that we know that this type of
4 extensive evaluation indicates that you are at
5 least three orders of magnitude below an area of
6 concern for human health.

7 In light of what has just been
8 said, I wonder if I could ask a question of the
9 group, and that is: Does anyone know what the
10 initials NERP represents? Could I have a show
11 of hands? Good, three people.

12 In the mid-1970's Congress declared
13 the INEL to be the nation's second National
14 Environmental Research Park. To me this goes
15 beyond DOE's ownership of the land. There are
16 very few areas in this country that have been so
17 designated. All lands within the boundaries are
18 a protected outdoor laboratory where scientists
19 from throughout the country can conduct
20 ecological studies.

21 This part of Idaho is the largest
22 undisturbed area of sagebrush vegetation with
23 over 400 species of native plants. I would
24 expect that most environmentalists would like to
25 see this area preserved as a National

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ARA-07

1 Environmental Research Park, well beyond the 125
2 years that has been identified as part of the
3 paper study that has been made.

4 I'm going to touch upon a few other
5 items. While I'm endorsing the No Action
6 proposal, I really support perhaps 95 percent of
7 what is contained in the documentation, and
8 perhaps for somebody who asks as many technical
9 questions as I do, this is a very high
10 percentage.

11 Let me mention a couple things that
12 are not mentioned, which I believe should be
13 there. No mention of the tritium or chromate
14 levels in the drinking water at the TRA. Three
15 wells were mentioned and identified, and I
16 believe these are the production wells. There
17 is data on this which should support this study.
18 In fact, the use of these wells should provide
19 drawdown information, which may impact some of
20 the movement of the water from the lower perched
21 zone.

22 Now, the report also mentions on
23 page A-10 the tritium concentrations will
24 decrease due to natural radioactive decay. It
25 does not mention that dilution is also a factor

1 which is taking place.

2 Now I would like to talk about
3 drinking water standards, if I may. And I look
4 upon this as a question of honesty more than
5 anything else, and particularly, young lady, if
6 you don't mind, I'll address this to EPA. And
7 EPA has over the past seven years been
8 preparing -- they have known that the current
9 values used for tritium in drinking water are
10 ultrasafe. And by at least a factor -- and to
11 make it a big number, I'll say 300 percent.
12 This has been known. EPA has had a draft out --
13 in fact, they started revising the drinking
14 levels seven years ago. They were supposed to
15 have been published in June of '91, then it was
16 postponed to June of '92. This is in 40 CFR,
17 part 141. Last month I contacted EPA in
18 Washington and the latest date is now April of
19 '93.

20 This fact that these numbers are
21 going to be changed significantly should be part
22 of this report, part of your openness. Tritium
23 will go from 20,000 picocuries per liter -- this
24 is a god-awful number -- to 60,900 picocuries
25 per liter. Strontium-90 will be increased by a

1 factor of 5, or 500 percent, if you like, from 8
2 to 42.

3 The other thing that I will be
4 critical of your report is you have a
5 footnote, I think it's footnote B, which says
6 that you will not identify the drinking water
7 level for cobalt or cesium-137. I really
8 believe, to be more open, you should include
9 these numbers cobalt-60, 218 picocuries per
10 liter, cesium-137, 119. Then use your footnote
11 to identify that this is for isotopes alone and
12 that when you take into account a multiplicity
13 of isotopes, you're in a different ball game.

14 By the way, these latest figures
15 for EPA that gave you the change in 40 CFR, part
16 141, these are in the Federal Register of July
17 18th, 1991, and my information now is as of June
18 of '92, last month, that these are the final
19 figures.

20 The other thing I find very
21 interesting, and again, I'm critical of EPA, I'm
22 astonished under the chemical drinking water
23 standards have not been established for cobalt,
24 manganese, fluoride. I can't believe that in
25 today's world that we have not established

1 levels that can be used to protect the public,
2 particularly when you consider how long many of
3 us have been using fluoride artificially
4 injected in our drinking water for health
5 purposes.

6 One final comment, if I may, and
7 it's basically a request, and I would hope that
8 you would publish the public comments that were
9 made at the original meeting several months ago
10 when the general scoping was being made on this
11 particular project, because the general
12 conclusion that was made by the people and the
13 general theme of the comments that were made was
14 that there was no need to take protective
15 action. Thank you.

16 MS. GREEN: Is there anyone else
17 who would like to take this opportunity to make
18 verbal comments on the perched water study?

19 Okay, if there are no other
20 comments to be made at this time, why don't we
21 take a 15 minute break before the second part of
22 the meeting where we will discuss the CFA area
23 projects.

24 (A recess was taken.)

25 MS. GREEN: Before we begin the

1 second half of the meeting, I would just like to
2 respond to a comment that was referring to a
3 nameless voice on the telephone in response to
4 the question of: Is DOE going to be around in
5 125 years, said, "yes," end quote. The name of
6 the voice on the phone was myself, and to the
7 best of my recollection I recall my answer being
8 that 125 years was based on 25 years of
9 operation and 100 years of institutional control
10 as recorded under DOE order, end quote there.
11 The 100 years of institutional control is also
12 required in the Code of Federal Regulations.

13 Let's move on to the second half of
14 tonight's meeting. From here on we'll be
15 talking about the Motor Pool Pond at and the
16 Central Facilities Area and the Chemical
17 Evaporation Pond at the Auxiliary Reactor Area
18 proposed plans. We combined these because they
19 are very similar in many respects, they are both
20 relatively small units, they both concern pond
21 sediments of ponds that are no longer in use. A
22 similar approach was used in investigating and
23 assessing these sites, and we've come to the
24 same recommendation of No Action for both of
25 these units.

1 I would also like to introduce the
2 respective project managers on these sites for
3 EPA and Department of Environmental Quality.
4 Dave Frederick to my immediate right is the WAG
5 manager for WAG 4, Central Facilities Area. Tom
6 Stoops is the WAG 5 manager for the State, the
7 Department of Environmental Quality. Howard
8 Blood on the far left over there is the WAG
9 manager for both WAG 4 and 5 for the
10 Environmental Protection Agency.

11 With that, Nolan, I'll give things
12 back to you then to provide the information on
13 the CFA Motor Pool Pond Proposed Plan.

14 MR. JENSEN: I get to be lucky
15 enough to have worked on both of these projects.
16 And again, I will present the introductory
17 information and then if there are any hard
18 questions I will quickly refer you to my
19 subcontractor.

20 I'll just be presenting the Motor
21 Pool Pond. This is 4-11, Operable Unit 4-11,
22 and both of these projects are quite similar.
23 This one in particular is the thing that we have
24 looked at with the Motor Pool Pond and the risk
25 that the sediments in the pond pose. So it just

1 looks at those sediments.

2 This is a photograph of the Motor
3 Pool Pond. This greenish area right here is
4 what we're considering. The Motor Pool Pond is
5 no longer in use. They stopped using it in
6 about 1985. This sign right here -- just in
7 case you're curious about what that is, all of
8 the sites that are to be investigated under the
9 agreement have a sign similar to that one to
10 mark them so that everyone knows that the site
11 is there.

12 As you can see, this photograph was
13 taken just a couple of weeks ago. So the green
14 in there is a result of this rain. Earlier this
15 spring it was completely dry.

16 Just to give you a little bit of
17 history of what this pond is all about, out at
18 the Central Facilities Area, which is the
19 administrative area for INEL, a lot of
20 activities like central warehousing and support
21 activities go on at the Central Facilities Area.

22 This building in particular is the
23 service station. And though it's a little
24 bigger than your typical in-town service
25 station, it does a lot of the same kind of

1 things. Maintenance, oil changes, washing, that
2 kind of thing is done on fleet vehicles and
3 equipment out at the site. So that's the
4 building that we're talking about. This is a
5 photograph inside of the building. This floor
6 drain right here, as things are washed off of
7 the vehicles, they go down into the floor drain.
8 That's from inside of the building.

9 Just on the outside of the building
10 there is another drain and grate for vehicle
11 washing. So the wash water went into this
12 grate, both of them went into a sump, into a
13 pipeline, the pipeline went out to the east of
14 the Central Facilities Area. The building that
15 we were just looking at back in here, the
16 pipeline comes out towards us to the east here,
17 and the pipe has an outlet at the back of this
18 ditch. The water then ran through, again, like
19 I said, it hadn't been used since 1985, but the
20 water then ran through this ditch to the east,
21 then into the Motor Pool Pond again over to the
22 right side of the picture. So that's the
23 situation at the CFA Motor Pool Pond.

24 What was done as far as the
25 Remedial Investigation, there were several

1 samples collected, 51 to be exact, of the
2 sediments in the pond in 1989. These samples
3 were collected between 0 and 15 feet, and they
4 were collected both from the pond and from the
5 ditch leading to the pond.

6 So that is how the question again
7 was answered: What is out there? And this is a
8 list of the contaminants that were detected, and
9 again highlighted are the contaminants that were
10 of greatest concern in the risk assessment and
11 found to cause the greatest risk.

12 Now, as far as how those
13 contaminants can reach an individual, a person,
14 there are a couple of things evaluated. First,
15 we looked at exposure to on-site workers. The
16 Central Facilities Area has about 1,200
17 employees working there. The other thing was
18 looked at, again, a future resident. In both
19 cases what was considered is: Could a sediment
20 be blown up and inhaled? What would the risk be
21 by exposure to skin, to ingestion of soil, to
22 exposure to radiation at that site? That was
23 looked at for both the occupational scenario and
24 the residential scenario.

25 Also, as I mentioned that in this

1 case two scenarios were looked at for the future
2 resident, and that was at 30 years and at 100
3 years. The occupational scenario was looked at
4 in the present. Again, because the site has
5 restricted access, no one is allowed to go in
6 there unless on official business. For the
7 current scenario, we did look at the
8 occupational. This little diagram is supposed
9 to represent the pond, and the risk calculations
10 showed that risk is about one in a million.

11 For future residents, again, the
12 same scenario and the risk was shown to be about
13 two in 100,000. Both of those numbers are for
14 the non-carcinogenic risk.

15 MR. FREDERICK: Excuse me, Nolan,
16 that would be carcinogenic risk.

17 MR. JENSEN: Excuse me, sorry,
18 right; carcinogenic risk.

19 AUDIENCE MEMBER: Is that risk, one
20 in a million and two in 100,000, a risk per
21 year, or assuming a 30-year residency at that
22 point?

23 MR. JENSEN: For the future on-site
24 resident, it's a 30-year exposure. Is that
25 correct?

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MR. STANISICH: Yes.

AUDIENCE MEMBER: For the occupational that's a per year?

MR. BLOOD: No, 25 years.

MR. JENSEN: So this is a summary of the carcinogenic risk for a future on-site resident. Again, in comparison to the risk range established by the regulations for 100 years and for 30 years, as you can see, they are not that much different.

Now, looking at non-carcinogenic effects or toxic effects, as you can see, it's below the hazard index of one.

That was a real quick overview, but again, based on that assessment, we're recommending that No Action be taken. So any questions on this one?

MS. GREEN: Do we have any specific questions about the presentation on this? I think we're going to try and lump the more general Q and A session after we do the Chemical Evaporation Pond.

AUDIENCE MEMBER: Can we see the summary slide on the carcinogenic risk again? Is that a correct representation of the 30-year

1 exposure?

2 MR. JENSEN: Yes. For a resident
3 living there, starting 30 years from now.

4 AUDIENCE MEMBER: Thank you.

5 AUDIENCE MEMBER: May we see the
6 contaminants slide, please.

7 Do you have estimates of the
8 concentrations or the total value contained for
9 lead or plutonium?

10 MR. STANISICH: Well, from the
11 sampling data, we have the 51 samples we have
12 the levels that were detected in those samples.
13 I can't give them off the top of my head.

14 AUDIENCE MEMBER: I think there
15 would be a summation of how much of this stuff
16 is out there.

17 MR. JENSEN: Nick is looking
18 through that quickly now. This is Nick
19 Stanisich from MSE. He was one of the people
20 that worked on this project for us.

21 MR. FREDERICK: I can give you a
22 quick summation. For cadmium the maximum
23 concentration was 38.8 milligrams per kilogram.
24 The mean was 7.1 milligrams per kilogram. And I
25 calculated that mean value based only on the

1 concentrations that were above the background
2 level. The background level for cadmium was 1.6
3 milligrams. Moving down the non-carcinogenic
4 list, the maximum level of lead detected -- for
5 the sake of being brief, all these
6 concentrations will be in milligrams. Lead
7 maximum was 631, the mean, once again, of the
8 value of above background was 121, the
9 background value for that area was measured at
10 50.2. Chromium, the maximum value was 91, the
11 mean was 32, the background value was 30.7.
12 Barium, the maximum value was 434, the mean
13 value of 189, background of 434. Would you like
14 the information on carcinogenics?

15 AUDIENCE MEMBER: Yes, please.

16 MR. FREDERICK: For cadmium, again,
17 that would be the same as the other ones,
18 maximum 38.8, mean 7.1, background 1.6. In the
19 risk assessment we use the maximum value of PCB
20 detected that was 1.47. Chromium, again, 91.3,
21 32.4, 30.7. Beryllium, the maximum that I
22 detected was 1 milligram per kilogram, the mean
23 was .89, the background values are not detected,
24 and the detection was .23 milligrams per
25 kilogram. For the radionuclides, maximum value

1 for cesium-137 was 8.41 picocuries per gram with
2 a mean of 1.6. And for plutonium-239, the
3 maximum value was 4.29 picocuries per gram with
4 a mean of 2.2 picocuries per gram.

5 Americium-241, maximum of 9.46 picocuries per
6 gram, a mean of 1 picocurie per gram.

7 The reason I did not give you
8 measured values for strontium-90 and barium-137m
9 or metastable is because they are assumed to be
10 present due to the presence of cesium-137.

11 MS. GREEN: Do we have any other
12 specific questions on the presentation before we
13 move on to the Chemical Evaporation Pond
14 presentation? Then we'll open it up for more
15 general Q and A on both of the projects.

16 AUDIENCE MEMBER: I'm wondering, a
17 lot of these contaminants you wouldn't expect
18 from a vehicle servicing facility. Did you ever
19 figure out where the source was for some of
20 those chemicals?

21 MR. JENSEN: The best guess is that
22 during the washing, I think the proposed plan
23 alludes to the fact that some of the vehicles
24 had low levels of contaminants that were washed,
25 so that's probably where it came from.

1 AUDIENCE MEMBER: {Inaudible.}

2 MR. JENSEN: I can't hear that one.

3 AUDIENCE MEMBER: Do they

4 deliberately wash their property; is that the

5 question?

6 AUDIENCE MEMBER: No, the question

7 was: Was it by intent to wash a vehicle at that

8 low level of contamination in that area or was

9 it not?

10 MR. JENSEN: This is Bill Figott,

11 he's from EG&G and has worked out there.

12 MR. FIGOTT: What they do is bring

13 the equipment in to service, it's part of that

14 construction equipment. Now, if it's very

15 highly contaminated, they decontaminate that

16 unit out in the field and try to get it all down

17 as low as they possibly can, but there are

18 probably some in crevices and fractures. That's

19 our best guess to where that came from.

20 MS. GREEN: Thank you, Bill.

21 Any other specific questions on the

22 presentation?

23 I would like to now introduce to

24 you Randy Bargelt. Randy is the WAG 5 manager

25 for EG&G Idaho, who will present information on

1 the proposal for the Chemical Evaporation Pond.
2 After Randy has completed his presentation, we
3 can respond to specific questions on that
4 presentation and then open it up to general Q
5 and A on both the CFA and ARA plans. Then
6 following that we'll receive formal verbal
7 comments.

8 MR. BARGELT: Thank you, Lisa. I'm
9 here to talk about Operable Unit 5-11 for the
10 Chemical Evaporation Pond at the Auxiliary
11 Reactor Area. This investigation is to
12 evaluate, again, very similar to the Motor Pool
13 Pond, the risk associated with sediments that
14 are left within that pond.

15 This is a photograph of the
16 Auxiliary Reactor Area 1, which encompasses this
17 area right here, and the Evaporation Pond here.
18 You can see, this picture was taken when the
19 pond was in operation. And the pond was in
20 operation from 1971 to 1988, so this is a
21 pre-1988 photograph.

22 You can see here the area that is
23 moist, that this pond is being used at that
24 time. This is a schematic diagram of that area,
25 and the pond was filled, was drained, Building

1 627, about 300 feet of pipe out to the Chemical
2 Evaporation Pond here.

3 It did not drain any of the waste
4 from the facility here at 626. During our
5 investigation or our sampling, we noticed that
6 an area right adjacent to the end of the
7 discharge pipe, which is about 100 square feet,
8 was the area of highest contamination.

9 This is another photo of the area
10 that was green in the previous photograph, and
11 you'll notice this was taken at a much later
12 date, which was a couple weeks ago, and the
13 green vegetation has since died. And the area
14 that I pointed out where the star was in the
15 previous slide was right here, and that's the
16 area of highest concentration. And the 100
17 square feet I spoke of earlier was this area
18 right here with the high vegetation there.

19 This is another photograph looking
20 back towards RA I from the pond itself and just
21 looking to the north. The area of highest
22 concentration, again, would be right in here.

23 During our characterization
24 activities we sampled in 1990 approximately 160
25 samples in 40 locations, and sampled from the

1 surface to approximately four feet in depth to
2 the top of the basalts. The soils out there are
3 very thin, the average soil thickness at the ARA
4 is about two feet. From that sampling, we
5 determined the nature and extent of
6 contamination that was in the pond area.

7 Again, this will be a familiar
8 looking slide, and the contaminants of concern
9 were screened very similarly to the other two
10 risk assessments that were presented previously.
11 These are the contaminants of concern, and our
12 risk assessment is being given by barium,
13 plutonium-239 and cobalt-60. The same type of
14 risk assessment for the scenarios that Nolan
15 presented earlier were done here.

16 The same slide. Again, the
17 exposure pathways that were evaluated were
18 inhalation, direct exposure, direct ionizing
19 radiation and soil ingestion and skin contact.
20 These are the main pathways that we were
21 concerned with because of the radiation -- the
22 contaminants of concern were the rad samples and
23 direct ionizing radiation was the major pathway
24 that we were concerned with.

25 Again, similar to the other two

1 risk assessments, the current occupational
2 scenario at the ARA facility, which is a surplus
3 facility, the workers are only out there on
4 decommissioning and decontamination projects and
5 environmental restoration projects. So on a
6 daily basis there are not a lot of workers on
7 the site. It's also a restricted access, but
8 the risk turned out to be two excess cancer
9 cases in ten million.

10 The future residential scenario at
11 100 years, you notice the facility has been
12 removed, which is in the plan to do at this
13 time, and a residence was located next to the
14 evaporation pond, and the risk would be one
15 excess cancer risk in one million at 100 years.

16 The carcinogenic risks for the
17 residential scenario both are within the
18 acceptable risk range. At 30 years it was two
19 in one million and at 100 years it was one in
20 one million excess cancers.

21 Also for the pond for the hazard
22 index we see no adverse effects for the
23 non-carcinogenic contaminants and we see it at
24 .09, which is well below the hazard index of
25 one.

1 The agencies' recommendations are
2 that we take no further action on this site
3 because it poses very little threat to the
4 environment or human health.

5 MS. GREEN: Do we have any specific
6 questions of clarification on Randy's
7 presentation before we enter into the general Q
8 and A session on both plans?

9 Thank you, Randy.

10 Let's get started with the question
11 and answer session on both the Motor Pool Pond
12 and the Chemical Evaporation Pond, and if you
13 will please help us out and tell us whether your
14 question is directed towards one specific plan
15 or both of them in general so we can then
16 indicate what the response is.

17 And again, please pass your note
18 cards to the end of the aisle or wave them,
19 whatever it takes to get Reuel's attention. If
20 you have additional note cards that you want
21 collected during the session, raise your hand.
22 We'll begin with the note cards as before. If
23 after reading the card any of the responders are
24 unclear about what the question is, we'll be
25 asking the questioner a little more about the

1 question in order to provide the proper
2 response.

3 For those of you who want to come
4 to the microphone and not use note cards, please
5 do so. If you could please ask one question at
6 a time so that your questions can be answered
7 clearly. Any questions on either plan?

8 AUDIENCE MEMBER: I'm Dennis
9 Donnelly. It's a question on both plans, or an
10 observation, perhaps, that it would appear that
11 your methodology again includes risks due to
12 direct ingestion or inhalation of materials at
13 the sites and does not include pathways due to
14 future biological concentrations or biological
15 dispersal. I would presume that in the
16 springtime there is a steady stream of water at
17 the little depressed areas on the site. Anyway,
18 is that also true for these assessment, the risk
19 assessment does not include biological
20 concentration or dispersion?

21 MS. GREEN: Nolan, do you want Nick
22 to answer that question on the risk assessment?
23 Did we include the ecological risk evaluation
24 that is addressed?

25 MR. STANISICH: I'm Nick Stanisich.

1 I have worked on risk assessment. Yes, we do
2 include an ecological risk assessment to look at
3 pathways, both vegetation pathways and animal
4 pathways to humans. We didn't look specifically
5 at agricultural scenarios because the soils in
6 that area are so shallow and basalt out crops
7 occur numerously in the areas, as you can see by
8 the photos. So that pathway of raising a garden
9 or sustained agriculture in that area turns out
10 not to be a viable scenario.

11 MS. GREEN: Any others before we
12 begin the oral comment, receive oral comments on
13 both of these projects?

14 AUDIENCE MEMBER: This is not so
15 much a question, but it's an observation. The
16 half-life for plutonium, for example, is
17 thousands of years and these bottoms dry up, the
18 wind blows, they get wet, the animals come
19 through. If the stuff makes it to the aquifer,
20 of course, it doesn't stay put.

21 MS. GREEN: Was that a question or
22 a statement?

23 AUDIENCE MEMBER: Just a statement.

24 AUDIENCE MEMBER: I have a question
25 following up the question that was asked on the

1 Motor Pool Pond. Do you have the concentrations
2 of radionuclides of interest, the plutonium,
3 barium or the cesium-137 that were found in
4 those samples?

5 MS. GREEN: There was an onset to
6 Mr. Donnelly's question taking into
7 consideration airborne distribution of
8 plutonium, and I believe --

9 MR. STANISICH: That was taken into
10 consideration in both the occupational and
11 residential scenarios, inhalation of plutonium.

12 As you can see, here are the
13 concentrations, the chemicals that were detected
14 and radionuclides, the upper range of background
15 as compared to the range of detection --

16 MS. GREEN: Is this related to ARA?

17 MR. STANISICH: This is ARA.

18 AUDIENCE MEMBER: So only one
19 sample of plutonium was selected?

20 MR. STANISICH: That's true. That
21 was collected at an area of the highest
22 concentrations of other radionuclides as
23 surveyed by using field screen instruments that
24 detect ionizing radiation.

25 Another method that we use in the

1 site investigation was -- although only one
2 sample was collected and specifically analyzed
3 for plutonium-239, we used a relationship
4 between the detection of americium-241 and the
5 presence of plutonium. Americium-241, which is
6 also a transuranic, is detected in the soil
7 through gamma spectroscopy, then it's probable
8 that plutonium-239 would also be detected, and
9 since the detection of americium was
10 non-existent through the gamma spectroscopy,
11 therefore, it was concluded that there was not
12 significant plutonium concentrations in the pond
13 sediments.

14 MS. GREEN: Thank you, Nick. Are
15 there any other risk assessment-type questions?
16 Do we have any other questions about data or
17 risk assessment or any questions on the CFA and
18 ARA plans?

19 AUDIENCE MEMBER: Do you have any
20 specific --

21 AUDIENCE MEMBER: Could you move it
22 a little bit so we can see the units?

23 Also the headings of those columns,
24 it's hard -- that's enough.

25 MR. STANISICH: You're telling me I

1 have to make this slide smaller or two slides.

2 AUDIENCE MEMBER: Isn't there a
3 copy of this table in the RI?

4 MR. STANISICH: It is, it's in the
5 report. It's not in the proposed plan, it's in
6 the RI Report, the big report, but there is a
7 summary of the metals detected in the proposed
8 plan. There is a table and index where the
9 concentrations of radionuclides are also listed,
10 I believe -- no -- metals, yes, but
11 radionuclides no.

12 AUDIENCE MEMBER: That's correct.

13 MR. STANISICH: But it is in the RI
14 Report.

15 MS. GREEN: Any other questions on
16 either the ARA or CFA Proposed Plans?

17 If that is the case, we'll go on to
18 the portion of the meeting that is designed for
19 you to provide oral testimony regarding the
20 Motor Pool Pond and the Chemical Evaporation
21 Pond Proposed Plans.

22 Again, the agencies will listen to
23 your comments, but will not respond to them
24 tonight. They will be evaluated and considered
25 for the Record of Decision and responded to in a

1 separate Responsiveness Summary for each topic.

2 If someone makes a statement for
3 which either EPA, DOE or the State personnel
4 would like additional information for
5 clarification, please be sure to ask the speaker
6 for that clarification so that we can understand
7 the comments.

8 For clarity, would you please
9 state, again, not only your name at the
10 beginning of your comment but also which plan
11 you're commenting on at the beginning of your
12 comment.

13 Reuel, how many people have signed
14 up at this point to make verbal comment?

15 MR. SMITH: We don't have any
16 signed up.

17 MS. GREEN: Do we have anybody who
18 would like to make oral comments on either CFA
19 or ARA Proposed Plans at this time?

20 When you make your statement you're
21 welcome to take a single turn up to five minutes
22 as we described before. If you're not able to
23 put all your thoughts into a five minute period,
24 remember that the comment period is open until
25 August 5th, and written comments are considered

1 with equal weight.

2 I guess we can begin.

3 AUDIENCE MEMBER: I'm Dennis
4 Donnelly. I would like to ask you to clean both
5 places. I feel it would be extremely easy to
6 do, a few thousand square feet. It's a very
7 simple cleanup, none easier. I would like you
8 to be able to say that you've cleaned up your
9 mess. Thank you.

10 AUDIENCE MEMBER: John Tanner from
11 Idaho Falls. Once again, I think DOE, EPA and
12 State of Idaho have made the right decision. I
13 just don't believe there is enough of a mess to
14 be worth the attempt to so-call clean it up.
15 The money can better be spent elsewhere.

16 MS. GREEN: Is there anybody else
17 who would like to make oral comments for the
18 record on these two proposed plans?

19 With that, I'll again remind you
20 that if you change your mind between now and
21 August 5th, that written comments receive equal
22 weight as oral comments and there are forms at
23 the back of the room. If you would like to pick
24 one up and take it with you just in that
25 eventuality, please feel free to do that.

#T1-2
ARA-08

#T1-3
ARA-07

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With that, I would like to thank
you all for coming out tonight and for all your
efforts. We hope we helped explain some of the
details connected to this topic. And I want to
thank you for making comments on this plan.

Thank you and good night.

(The hearing concluded at 9:30 p.m.)

**PERCHED WATER, MOTOR POOL POND AND
CHEMICAL EVAPORATION POND PROPOSED PLANS**

**BURLEY, IDAHO
July 21, 1992
6:30 p.m.**

SPEAKERS

**Lisa Green, DOE-IDAHO
Nolan Jensen, DOE-IDAHO
Joe Gordon, DAMES & MOORE
Randy Bargelt, EG&G IDAHO
Dave Hovland, DEQ
Dave Frederick, STATE OF IDAHO
Linda Meyer, EPA
Peter Sinton, DAMES & MOORE**

**NANCY SCHWARTZ REPORTING
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1 BURLEY, IDAHO, TUESDAY, JULY 21, 1992, 6:30 P.M.

2

3 MS. GREEN: I would like to welcome
4 everyone to tonight's meeting. We're glad you
5 were able to attend, and we certainly look
6 forward to a very productive meeting.

7 My name is Lisa Green. Tonight I
8 will be serving a dual role. First, I'll be
9 acting as moderator for the meeting. As
10 moderator my job is to move through the agenda
11 in a timely manner and ensure that everybody who
12 wishes to participate is provided an
13 opportunity.

14 The other role I'll be playing
15 tonight is that of the remedial project manager
16 for DOE-Idaho. In that role I'll be helping to
17 answer some of your questions on the project.

18 I'll try to indicate specifically
19 when I'm putting that hat on so that you know
20 that I've slipped out of the moderator role and
21 into a representative of DOE.

22 We have several goals for tonight's
23 meeting. The first goal is to gather public
24 comment on the three proposed plans. They are
25 plans for No Remedial Action at three sites at

1 the INEL. They are at the stage where DOE, EPA
2 and the State have developed a technical
3 recommendation and are taking public comments
4 before a final decision can be made on each of
5 those three projects.

6 Input received during this public
7 comment period, including formal comments made
8 at this meeting and written comments received
9 during the comment period, will be used to
10 evaluate the recommendation that's been put
11 forth, and then to formulate the final decision
12 for these three sites.

13 The second major goal is to give
14 you an opportunity to ask questions and inform
15 you about the details of the three proposed
16 plans that are before the public at this time,
17 and also to explain how they are put into a
18 broader scope of DOE's cleanup activities at the
19 INEL. So basically we're here to listen to each
20 other tonight.

21 Let's take a moment to look at the
22 agenda that you received when you entered the
23 room. If any of you did not pick up one, we'll
24 be happy to provide you with one. As you can
25 see, we have three topics on tonight's agenda.

1 The first topic is a proposed plan for the
2 Perched Water System at the Test Reactor Area.

3 Following a brief presentation on
4 that topic, we'll have a question and answer
5 session to clarify any information that you
6 would like to have explained in greater detail
7 than what was provided in the presentation.

8 After we've answered all your
9 questions, we'll then take time to receive your
10 formal verbal comments on the Perched Water
11 Proposed Plan.

12 After a short break, we'll move on
13 to the second part of tonight's meeting, and
14 that is to discuss the proposed plans for the
15 Motor Pool Pond at the Central Facilities Area
16 and the Chemical Evaporation Pond at the
17 Auxiliary Reactor Area.

18 These projects are very similar in
19 nature. We combined them in response to a
20 number of public comments that we received in
21 the past requesting that we try to combine
22 similar topics whenever that's possible. So
23 that's what we've done here tonight with the
24 Motor Pool Pond and the Chemical Evaporation
25 Pond.

1 At this time, I would like to
2 introduce several individuals in the audience.
3 The first one is Reuel Smith; if you would like
4 to stand, Reuel. Reuel is the community
5 relations plan coordinator for the INEL. This
6 is also probably a good time to mention that the
7 public comment period on DOE's Community
8 Relations Plan has been extended to September 1,
9 1992. This plan establishes the process by
10 which DOE communicates environmental restoration
11 information to the public and helps communicate
12 concerns back to DOE. So if you have any issues
13 related to the Community Relations Plan, then
14 you might want to talk to Reuel tonight.

15 The second person is Mike Coe.
16 Mike, would you please stand. Mike is with the
17 INEL public affairs office. So if you have any
18 questions or comments outside the scope of
19 tonight's meeting, Mike will be happy to speak
20 with you either at the break or following the
21 meeting. And I think Mike had some information
22 he wanted to provide here tonight?

23 MR. COE: Yes, I just wanted to
24 announce that the draft INEL Site-Specific Plan
25 is now available. The Site-Specific Plan

1 basically outlines the INEL's environmental
2 restoration waste management activities, plans
3 and opportunities for public participation for
4 the fiscal year. This year we did things a
5 little different with the Site-Specific Plan.
6 We're making draft plans available for public
7 review so you can now comment on the draft
8 Site-Specific Plan, and your comments will be
9 addressed and incorporated into the final Site
10 Specific Plan. The comment period on that
11 starts on August 7th, and we'll have a meeting
12 in Twin Falls on August 24th to accept public
13 comments. If you want a copy of that, please
14 just see me at the break or after the meeting,
15 and I'll make sure you get a copy of it.

16 MS. GREEN: Thank you, Mike. Linda
17 Baird is also here tonight. Linda is the Twin
18 Falls Outreach office manager. And Linda, would
19 you like to say a few words also?

20 MS. BAIRD: I would just like to
21 remind all of you that we do have an Outreach
22 office for the Magic Valley. We're located in
23 Twin Falls. We would welcome any of you to
24 utilize the office. We have a public reading
25 room that has the administrative records. We're

1 also available to help you in acquiring any
2 documents that you're looking for. So please
3 feel free to utilize our office for any
4 information that you're seeking.

5 MS. GREEN: Thank you, Linda.

6 Finally, based on some concerns
7 that were raised in a technical briefing in the
8 Twin Falls area last week on these plans, we've
9 asked Larry Mann, who is the program coordinator
10 for the US Geological Survey, we've asked him to
11 attend. Larry is here to answer any questions
12 about the Snake River Plain Aquifer that may
13 fall outside the scope of the three limited
14 projects that we're discussing here tonight. So
15 if you have questions about groundwater concerns
16 related to the INEL that the experts on the
17 three projects here cannot answer, we'll ask
18 Larry to supply us with those answers.

19 After each of the two presentations,
20 questions may either be submitted in writing
21 using the note cards you found on your chairs or
22 you're welcome to come up and use the microphone
23 that Lane will bring forward here.

24 We use note cards for a couple
25 reasons. One is they do allow people to clarify

1 questions and the respondents get a second or
2 two to prepare a good answer to those questions.
3 Second of all, some members of the audience may
4 not prefer to use the microphone. So that's why
5 the note cards are there. If you don't wish to
6 use them, please feel free to use the microphone.

7 We ask when you use the microphone,
8 please state one question at a time before you
9 go on to the next so we can provide a good
10 answer to the first one before we start thinking
11 about the second one.

12 Then after each question and answer
13 period, there will be an opportunity for you to
14 provide comments on the proposed plans for the
15 agencies' consideration. This is the formal
16 verbal comment period related to each of the
17 plans.

18 How do you make comments? As I
19 mentioned earlier, one of the purposes is to
20 provide you an opportunity to make your concerns
21 known to the agencies verbally. If you choose
22 not to do so, you may wish to submit written
23 comments or additional written comments in
24 addition to your verbal testimony. The address
25 of where to send the written comments is on the

1 back side of the agenda. If any of you have
2 brought prepared statements here tonight and you
3 would like to have them included in the record,
4 you can either read them during the oral comment
5 period or you can provide them to Reuel Smith
6 for inclusion in the record.

7 There is a tape recorder available
8 at the back of the room if you would rather not
9 provide your oral comments to the audience and
10 would like to do it privately.

11 In addition, there are specific
12 comment forms available at the back of the room,
13 one for each of the three projects in different
14 colors. You're welcome to fill out a form
15 tonight and leave it with Reuel or send it to us
16 in the mail. And I remind you that written
17 comments and verbal comments receive the same
18 weight.

19 Both written and verbal comments
20 are evaluated and responded to in the
21 Responsiveness Summary. You're welcome in
22 making your verbal comments, you're welcome to
23 take a single turn up to five minutes to make
24 your statement to ensure that everybody gets a
25 chance to participate.

1 The comment period for each of
2 these projects runs through August 5, 1992.
3 What happens to your comments after you have
4 made them? After the comment period has ended,
5 the Department of Energy will prepare a
6 summarization of oral and written comments
7 received during the comment period on each plan.
8 The three agencies, DOE and EPA and the State,
9 will then evaluate those comments and respond to
10 the comments that are relevant to each topic in
11 a document called a Responsiveness Summary,
12 which is part of the actual Record of Decision
13 for each project.

14 If anybody has signed the attendance
15 register or given written comments and provided
16 a return address, they will receive a copy of
17 the Responsiveness Summary.

18 We have a court reporter here
19 tonight to transcribe the meeting. To help the
20 court reporter, please everyone take a few
21 moments that it takes to come to the microphone
22 if you're not using the note cards; otherwise,
23 the court reporter may not capture what you're
24 saying for the record, each time you come to the
25 microphone with formal comments, not necessarily

1 just questions and answers, but to make your
2 formal comments, please be sure to state your
3 name and the court reporter has asked that you
4 please spell it for the record.

5 Now that I have given a lengthy
6 introduction, I would like to introduce the
7 agency representatives that are up here with me.
8 To my immediate right is Dave Howland with DEQ
9 for the State of Idaho. To his right is Linda
10 Meyer with the EPA, Region 10. I would like to
11 give both of them a chance right now to make any
12 brief remarks that they would like to make in
13 opening this meeting.

14 MR. HOVLAND: Thank you, Lisa. I'm
15 the State's INEL technical manager in Boise.
16 I'm also wearing another hat tonight. I'm the
17 technical lead for the TRA. I have a
18 counterpart in the Idaho Falls office, and
19 that's Shawn Rosenberger, who couldn't be here
20 tonight, but two of his staff members are and
21 they are going to be involved in the other two
22 proposed plans.

23 I would like to introduce them.
24 The first one is David Frederick. And Dave is
25 the lead for the CFA, and he's an environmental

1 scientist. The other person is Tom Stoops. Tom
2 is an environmental scientist, and he's also the
3 lead for the ARA. I would like to mention that
4 the State supports all three of these proposed
5 plans, and we have been actively involved in the
6 entire process that went into the remedial
7 investigation reports that were fed into this
8 proposed plan, and therefore the recommendations
9 that are made tonight.

10 The other thing I would like to
11 mention, as Lisa mentioned, we're very, very
12 supportive of a lot of public comment, basically
13 to feed into this Record of Decision and the
14 Responsiveness Summary that will come out of
15 these public comment periods.

16 I'm also really pleased tonight to
17 be able to introduce Dave Humphrey, who is out
18 in the audience over there. Dave is the State's
19 deputy director and the Governor's coordinator
20 for the INEL Oversight Program.

21 MS. MEYER: My name is Linda Meyer.
22 I'm with the Environmental Protection Agency.
23 I'm the project manager for the Test Reactor
24 Area, and have been working on that site since
25 October or so. I work more closely with Nolan,

1 on the other side of the table there.

2 We are also going to do a
3 presentation for the Test Reactor Area, which is
4 my Waste Area Group. And Howard Blood is the
5 Environmental Protection Agency representative
6 for the other two proposals that are presented
7 this evening.

8 I would just like to emphasize that
9 we are involved in these projects from the
10 scoping phase and through the final end point,
11 and at this stage in the process, we haven't
12 reached a decision, but we have agreed on a
13 recommendation, and your input at this point is
14 important to us. So we encourage your
15 participation in the process.

16 MS. GREEN: Thank you, Linda.

17 With that introductory note, let's
18 move right into the presentation of the Perched
19 Water System at the Test Reactor Area.

20 First, I would like to introduce
21 Nolan Jensen, who is the DOE project manager for
22 that project. Nolan.

23 MR. JENSEN: What I'm going to try
24 to do tonight is not stand in front of my
25 slides, so is this a good spot? Can you see

1 past me?

2 AUDIENCE MEMBER: We can see
3 through you.

4 MR. JENSEN: Again, the three
5 projects we're going to talk about tonight are
6 the Perched Water System at the Test Reactor
7 Area, the Motor Pool Pond at the Central
8 Facilities Area and the Chemical Evaporation
9 Pond at the Auxiliary Reactor Area. So those
10 are three different areas at INEL.

11 I guess before we start into this,
12 the first thing I would like to do is talk to
13 you for just a few minutes about the process
14 that we do go through in coming to these
15 recommendations.

16 It's kind of hard to take several
17 months of work and reduce it down into a ten or
18 fifteen minute presentation. It's kind of
19 frustrating for us sometimes, and perhaps for
20 you as well, but what I would like to do first
21 is go through the process and explain how we
22 come to these recommendations, then we'll go
23 through each project so you can see how we step
24 through the process for each one of those
25 projects.

1 Again, these are the three sites.
2 Just a quick photograph. This is the Test
3 Reactor Area. Most of it anyway shows up on the
4 slide. These are series of waste water ponds
5 out by the Test Reactor Area, and I'll be
6 talking about those a little bit more when I get
7 to that project.

8 This is the Motor Pool Pond. I
9 believe this is the Lost River range that you
10 can see in the background. We're looking
11 northwest in this direction. This area right
12 here is the Motor Pool Pond -- or what used to
13 be a pond, I guess I should say.

14 Then this is the Auxiliary Reactor
15 and this is the Chemical Evaporation Pond right
16 here. Again, it's what used to be a pond.

17 Okay. Let's talk about the
18 overview of the process for just a minute.
19 First of all, how did we become a Superfund site
20 and get into this process to begin with? Under
21 the federal law, it's referred to as Superfund,
22 but it's really called the Comprehensive
23 Environmental Response Compensation Liability
24 Act, and now you know why they call it
25 Superfund.

1 But it's set up to look at sites
2 that are potentially contaminated and
3 potentially pose a threat to human health and
4 the environment. There is a scoring done by the
5 Environmental Protection Agency, and the INEL
6 went through that process and it was placed on
7 the National Priorities List at the end of 1989,
8 in December of 1989.

9 Now, once we are put on that list,
10 what does that mean? That means that we need to
11 go out to the site, to the INEL, and look at all
12 the potential contamination sites out there and
13 evaluate them and find out if they pose a
14 significant threat and if that needs to be
15 cleaned up.

16 That investigation process is
17 called a remedial investigation. And tonight
18 we're going to be talking about the three
19 remedial investigations for three of the sites
20 out there, and they are the ones that we've
21 mentioned.

22 Once the remedial investigation is
23 done, the three agencies come to a
24 recommendation. Tonight we've mentioned on
25 these three sites we've come to a recommendation

1 that there is no problem, there is no cleanup
2 needed. But once we get to that point, we come
3 to the public to find out if you agree with our
4 recommendations and help you understand how we
5 came to that decision, and then based on your input
6 we will make the decision, the final decision.
7 As Lisa said, that is documented in what is
8 called the Record of Decision. Once the
9 decision is made, then the decision is
10 implemented.

11 Let me talk in just a little more
12 detail about the remedial investigation. The
13 investigation really is -- even though there is
14 a lot going on and a lot of things to consider,
15 it's not really complicated, as far as what
16 we're trying to accomplish. The investigation
17 is just trying to answer a couple questions.
18 Number one, what kind of contamination is out
19 there? How much? How concentrated? And then
20 given that concentration and the potential for
21 that contamination to reach either humans,
22 animals or whatever, what risk does that pose?
23 Is it a problem? So that's what that
24 investigation does. The first part, again, is
25 characterization. The second part is the

1 assessment of the risk.

2 Once the calculations have been
3 done, there is a regulation known as the
4 National Contingency Plan. It is in the Code of
5 Federal Regulations. The National Contingency
6 Plan establishes ranges for risk that we compare
7 our calculations to to determine if there is a
8 significant risk or unacceptable risk.

9 EPA has established for
10 carcinogenic or cancer causing contaminants a
11 range between one in 10,000 to one in one
12 million possible incidents of cancer. So what
13 we're saying is, we do a calculation and if we
14 find out that the potential cancer causing
15 contaminants at that site could cause a risk in
16 this range or below, then it's not a problem.
17 If it's above this range, then we need to
18 consider cleanup.

19 AUDIENCE MEMBER: How much is this
20 range?

21 MR. JENSEN: The National
22 Contingency Plan was just updated in March of
23 1990; is that correct? I think that was the
24 last update.

25 That's for carcinogenic risk.

1 AUDIENCE MEMBER: Nolan, that just
2 talks about excess cancer, right?

3 MR. JENSEN: Right.

4 AUDIENCE MEMBER: It doesn't talk
5 about other things?

6 MR. JENSEN: No, that's the next
7 part, I'm getting to it. There is another part,
8 and that is other types of health effects. For
9 example, does this contaminant cause skin
10 rashes, high blood pressure, kidney damage,
11 liver damage, that kind of thing. So these are
12 the non-carcinogenic or toxic effects. And it's
13 looked at a little bit differently. What is
14 done in this case is a hazard index, what is
15 termed as a hazard index is established. What
16 is done is there are studies on all these
17 different contaminants to find out at what level
18 or what is the highest level at which no adverse
19 effect is shown.

20 So then we compare our level, the
21 level of the contamination at the site, to that
22 level and find out if they are above this
23 number, this hazard index. I hope that was
24 clear.

25 But anyway, if you're below that

1 number one, what that says is there is clearly
2 no potential for any adverse health effects.
3 That also takes into consideration sensitive
4 people for populations like infants or sick
5 people, that kind of thing. If we're above one,
6 then we need to consider cleanup.

7 That's generally the process
8 that's followed. Now, at INEL we put together
9 an agreement, it's called the Federal Facility
10 Agreement and Consent Order. That is an
11 agreement between the three agencies, DOE, EPA
12 and the State of Idaho, on how we'll implement
13 the Superfund process at INEL. That agreement
14 was signed on December 1991, so it was just a
15 few months ago.

16 Because INEL is a big facility,
17 it's pretty tough to go out and look at
18 everything at once, so the National Contingency
19 Plan suggests that complex sites be broken up in
20 smaller pieces. So what we developed at the
21 INEL was this concept of Waste Area Groups. And
22 a Waste Area Group essentially corresponds to
23 the different facilities at the INEL, with the
24 exception of WAG 10, and WAG 10 is specifically
25 looking at cumulative effects, pulling

1 everything together and in particular looking at
2 the Snake River Plain Aquifer. So the three
3 sites that we're talking about tonight are at
4 three of those Waste Area Groups.

5 Now, those Waste Area Groups are
6 still not small pieces of work, so they are
7 further divided into what is known as operable
8 units. Basically, this is just a bite-size
9 chunk of work, something we can focus on and
10 determine if there is a problem.

11 Again, these are the three operable
12 units that we're looking at tonight. Then what
13 we will do for each of these Waste Area Groups
14 is we will look at each of the operable units.
15 In the case of the Test Reactor Area there are
16 13 different operable units. The last operable
17 unit that we'll consider will be a comprehensive
18 investigation for all the Test Reactor Area.
19 Once all of those are done, then they will roll
20 up into this Waste Area Group 10 comprehensive
21 study.

22 We start with the small individual
23 sources, small individual pieces, look at them
24 cumulatively for each waste area group or each
25 facility, and then we'll do one last evaluation

1 for the INEL in its entirety and focus on the
2 Snake River Plain Aquifer in that case.

3 So hopefully that will explain
4 where we're going with these three projects and
5 how they are divided.

6 Any questions just on that general
7 process so far?

8 AUDIENCE MEMBER: I'm wondering
9 about -- you talk about comprehensive
10 investigation. You are talking about cumulative
11 impact, right?

12 MR. JENSEN: Right.

13 AUDIENCE MEMBER: If you look at
14 each individual site, look at the cumulative
15 impact of each individual site when you're going
16 through the process, but you're not going to
17 look at the cumulative impact of all these sites
18 until, what, 1999?

19 MR. JENSEN: It starts in 1998,
20 that last one.

21 AUDIENCE MEMBER: Is there any
22 mechanism for revisiting, say, the Perched Water
23 System under the TRA when you get back to that?

24 MR. JENSEN: Yes. There is always
25 potential. If you find out something that was

1 unexpected, that Record of Decision needs to be
2 revisited for sure.

3 AUDIENCE MEMBER: So you're not
4 going to close the book until that's done?

5 MR. JENSEN: Well, we'll close the
6 book as far as we come to a Record of Decision,
7 but then if we come up with new information that
8 sheds more light on the subject then we would
9 reopen it, if that's found to be necessary. But
10 not necessarily so, is what I'm trying to say.

11 Any other questions on the general
12 process before we start talking about each
13 project?

14 The first one that we're going to
15 talk about is the Test Reactor Area, Perched
16 Water System. Again, this is at Waste Area
17 Group 2. Now, the focus of this study was to
18 look at a body of water, which we call the
19 Perched Water System. It's a body of
20 groundwater beneath the Test Reactor Area. And
21 the focus of the study was to look at that
22 water, that perched water, and the effect that
23 that perched water has on the Snake River Plain
24 Aquifer and determine if that poses a risk.

25 So again, I showed you this

1 photograph before, this is the Test Reactor
2 Area. What happens is during the operations of
3 these industrial facilities at the Test Reactor
4 Area, the wastewater from those operations is
5 discharged through a series of ponds.

6 This one right here is called the
7 Warm Waste Pond. We talked to you about that
8 one about a year ago about the contaminants and
9 the sediments. This is called Cold Waste Pond.
10 These two are essentially the ones that have
11 most of the water going into them and the Cold
12 Waste Pond especially has the greater volume of
13 water going into it right now even though it's
14 essentially clean water that's most of the
15 volume.

16 But anyway, as the wastewater goes
17 into these ponds it percolates through the
18 subsurface. As it percolates down through the
19 sediments in the pond, it encounters layers of
20 soil in the subsurface that aren't as permeable
21 as others. In particular, there are two layers
22 beneath the Test Reactor Area, two layers of
23 soil that slows down the water as it percolates
24 downward and it slows it down enough that the
25 water mounds or perches, so that's where the

1 term perched water comes from.

2 Directly beneath each of the ponds,
3 if there is enough water going into them, as it
4 encounters that first layer there is a small
5 perching body of water. Then there is a larger
6 perched water body at about 150 feet.

7 Again, here is the Snake River
8 Plain Aquifer. I didn't bring it up here, but
9 you might have noticed this is a drill core of
10 the rock down there. Basically, the whole
11 subsurface is layered lava rock, basalts, this
12 is some basalt and sedimentary interbeds, just
13 regular sediments. So that's kind of what the
14 rock looks like down there.

15 MS. GREEN: Nolan, could you
16 further explain that while that looks like a
17 pool of water there, in fact it is within the
18 open spaces in that rock. I don't know if we
19 should pass that around to people to look at.

20 MR. JENSEN: Larry, tell us if
21 there is anything to learn.

22 This is Larry Mann from the USGS.
23 In the subsurface, I guess some people have the
24 conception that there is a big body or a big
25 ocean down there, but really it's just that the

1 water fills in the void spaces in the rock.
2 This basalt, this is a pretty solid piece of
3 rock. If you looked at it on a bigger scale,
4 you would see there is fractures and cracks in
5 it.

6 What is really happening is the
7 sedimentary layers of that might be sand or
8 gravel. There is void spaces in that sand and
9 gravel and that is where the groundwater is. In
10 the basalts it's probably mostly in the
11 fractures and the water is sitting in those, but
12 it mounds up in those, so there is kind of a
13 mounded -- saturated mound of water down there.

14 Does that make sense?

15 MR. HOVLAND: You might also
16 mention the water is still going through the
17 perching zone slowly.

18 MR. JENSEN: Right. It doesn't
19 stop it dead, but it slows it down enough that
20 it creates a mass, so it does continue to flow
21 on down.

22 And what this is a picture of,
23 again, is the boundary of the Test Reactor Area.
24 This is the pond that I referred to earlier.
25 This and the approximate outer extent of that

1 larger deep perched body. It's about a little
2 less than a mile long and about a half mile wide
3 when this picture was done, or this thing was
4 created.

5 Where do we get that information?
6 Basically all of these little dots are
7 monitoring wells. The wells are located at
8 different levels, some of them in the aquifer,
9 some of them up in the perched water itself.
10 But that's where we get the information.

11 And what was done was not only look
12 to the water levels in those wells, but samples
13 were also collected from those wells and
14 analyzed for different contaminants.

15 Now, basically that explains how we
16 find out what is out there. Now, the next
17 question is: Okay, we found out what's out
18 there, how bad is it? That's what the risk
19 assessment part does.

20 For that what I'm going to do is
21 turn the time over to Joe Gordon. Joe Gordon
22 from Dames & Moore out of Colorado did most of
23 the work on this. Joe did the risk assessment
24 calculations, and I'll let him talk about that.

25 MR. GORDON: Well, this is meant to

1 sort of give you a graphic idea about what the
2 risk assessment process is. The first step is
3 you go out and you evaluate all the data at the
4 site, identify whether the contaminants are a
5 concern at the site, then you use that data and
6 follow essentially two parallel paths.

7 On the left there is the toxicity
8 assessment where you evaluate those contaminants
9 of concern from a toxicity standpoint for both
10 carcinogenic and non-carcinogenic effects. Then
11 in the exposure assessment you evaluate how the
12 contaminants and water are flowing through the
13 soils over time as well as calculating what the
14 contaminant uptake would be to humans and
15 ecological receptors. Then those two things are
16 put back together in the risk characterization
17 at the bottom here, where you combine the
18 concentration and exposure to humans and
19 ecological receptors with what the dose response
20 is.

21 The data obtained during the site
22 characterization is screened down to identify
23 those contaminants, which are envisioned to
24 contribute to at least one percent of the risk
25 at the site. So that way we can focus the risk

1 assessment on those things which are going to
2 dominate the risk. The contaminants that are
3 highlighted there are the ones that turned out
4 to be the most important in terms of risk
5 assessment.

6 Risks to humans were evaluated by
7 looking at the hypothetical exposure scenario in
8 which we envisioned that someone goes out and
9 lives at the site right at the Test Reactor
10 Area, installs a well directly below the Perched
11 Water System into the Snake River Plain Aquifer,
12 draws all of his water for domestic purposes
13 from that well, irrigates his crops, feeds his
14 livestock and he eats all of his vegetables and
15 livestock from the site.

16 Then we also evaluated ecological
17 receptors. We looked at vegetation in terms of
18 uptake of groundwater by vegetation. We looked
19 at herbivores, who eat that vegetation also
20 consume groundwater that's pumped to the surface
21 and, in the process of irrigation, that soil
22 becomes contaminated and direct contact with the
23 soil as well as carnivores, who are exposed to
24 all these same pathways with the addition of
25 consumption of animals at the site.

1 In order to evaluate the flow of
2 contaminants and water at the site, we
3 constructed a groundwater model, whose purpose
4 was to predict concentrations of contaminants
5 and water flow over time at the site.

6 One additional finding of note here
7 is that the Perched Water System, Deep Perched
8 Water System will disappear within seven years
9 after we shut down the Cold Waste Pond. And the
10 Cold Waste Pond was the one that Nolan mentioned
11 as the one pond which contributes most of the
12 water for the Perched Water System. I think
13 about 90 percent of the Perched Water System
14 comes from the Cold Waste Pond.

15 MS. GREEN: Joe, I think you need
16 to say a little more about what that water is,
17 if you would.

18 MR. GORDON: The Cold Waste Pond is
19 essentially clean water. Cold means clean,
20 that's what's cold means there, and warm means
21 radioactive. That's what the nomenclature is
22 there. The Warm Waste Pond, as you may or may
23 not be aware, is being replaced with a lined
24 pond now as we speak. It's being constructed.
25 So I think -- correct me if I'm wrong, but by

1 the end of this year the Warm Waste Pond will be
2 completely taken out of service in terms of the
3 contribution to the perched water bodies, and
4 after that the Cold Waste Pond will be the
5 dominant contributor, or essentially the only
6 contributor to the Perched Water System in that
7 area.

8 Well, the results of the risk
9 assessment are that the carcinogenic risk to a
10 hypothetical resident out at the site is one in
11 179 million for someone who is living out there
12 125 years from now.

13 Now, in addition to the calculation
14 that we did there, EPA in their review also
15 calculated at what time could someone go out
16 there and live, and construct that well under
17 the some scenario that I've described to still
18 be within the acceptable risk range. That was
19 determined to be the year 2000, and that's about
20 ten years.

21 MS. GREEN: Joe, if I could put on
22 my DOE hat for a second. I would like to make
23 sure everybody understands what the 125 was
24 based on. It is not based on any assertion that
25 DOE will be out there in 125 years. What it is

1 based on is the assumed reactor and TRA
2 operations for 25 years plus the fact that
3 regulations exist that would require
4 institutional control for low level waste left
5 in place for 100 years.

6 Now, those regulations would apply
7 to whoever owned that land, be it DOE, be it
8 another agency or be it a private person or
9 industry. So that's what the 125 years is based
10 on. And that was a point in time selected to
11 make one calculation. As Joe pointed out, we
12 make many other calculations for other points in
13 time also, and the recommendation is based on
14 all of those evaluations, not just the
15 calculation for 125 years.

16 MR. GORDON: This kind of gives you
17 the full spectrum there of over time what the
18 risk would be to someone who was living out
19 there. So what this is telling you that if
20 someone lived out there in ten years the risk
21 would be acceptable.

22 AUDIENCE MEMBER: Well, isn't it
23 true that groundwater moves? So why would we
24 even think that the same water would be there in
25 125 years?

1 MR. GORDON: Well, the Perched
2 Water System, it's true, the Perched Water
3 System will dissipate within seven years of the
4 Cold Waste Pond shutdown, but there are still
5 contaminants out at the site there, and the
6 groundwater model that we constructed looked at
7 natural rain, percolation through the Warm Waste
8 Pond and through the sediments that are there
9 right now. So this basically assumes that we do
10 nothing else out at the site.

11 MS. GREEN: I'm not sure if we
12 really answered the question.

13 AUDIENCE MEMBER: It wasn't really
14 a question, it was an observation that this is
15 meaningless because that perched water won't be
16 there in 125 years, it will have dissipated
17 away.

18 MS. GREEN: I think the risk
19 assessment was based on water in the Perched
20 Water System moving to the aquifer and a well
21 being drilled in the aquifer right there.

22 AUDIENCE MEMBER: It wouldn't be
23 there, it would have moved on. This is what
24 water does.

25 MR. JENSEN: What it's saying is

1 that even though most of the perched water is
2 gone in seven years through rain or whatever,
3 those contaminants still could in small amounts
4 go down to the aquifer.

5 Like Joe said, what was evaluated,
6 what if someone put that well right beneath the
7 Test Reactor Area, what kind of contaminants
8 would they be expected to be drinking out of
9 that water over the years. And that was
10 evaluated through 125 years.

11 AUDIENCE MEMBER: I guess what I'm
12 saying is we're not concerned what is going to
13 be right there in 125 years, we're concerned
14 with what has moved on down.

15 MS. GREEN: And I think that's why
16 the ten-year, for example, the ten-year
17 evaluation, was made to get a nearer term impact
18 of what would move down from the perched water.
19 Unless you're talking about -- again, I'm
20 wearing my DOE hat -- if this -- you're talking
21 about past releases to the aquifer before today;
22 is that what you're talking about, is that what
23 your concern is?

24 AUDIENCE MEMBER: I'm saying that
25 the contamination that's there right here, right

1 now wouldn't be there tomorrow, it moves, it
2 moves some, maybe it's a little, maybe -- but to
3 say that it --

4 MR. HOVLAND: I think it would help
5 if you would, maybe, define what "operable unit"
6 is here and the fact that there is another
7 operable unit out there that basically takes
8 care of what has gone off of TRA, and it's the
9 WAG 10.

10 MR. GORDON: I think there is also
11 another operable unit, which is what is up at
12 the surface, what is in the Warm Waste Pond
13 sediments.

14 MR. HOVLAND: I think the idea is
15 that the computer model predicts the
16 concentrations in the Snake River Plain in the
17 top twelve and a half feet directly beneath the
18 Perched Water System, and it's that contribution
19 of the Perched Water System on the top of the
20 aquifer, which is very conservative, because
21 there is not a lot of mixing. You just look at
22 the top of it, and that is what is predicted,
23 that defines this operable unit, the one we're
24 addressing. But this should really be pretty
25 well defined before we move on. I think it's a

1 critical issue.

2 AUDIENCE MEMBER: I think what the
3 concern is it's not what is at the site, it's
4 what moved off the site and on down the aquifer
5 towards Magic Valley.

6 MR. GORDON: Let me address that, I
7 thought that might be where you're getting.
8 This risk assessment actually evaluates the
9 maximum concentration and the maximum impact
10 that you could possibly get because it
11 calculates the risk to someone who installs a
12 well directly below the Perched Water System
13 without dilution through the Snake River Plain
14 River Aquifer at some further downstream place.

15 MS. GREEN: So we basically
16 evaluated a more conservative scenario than what
17 you have raised as a concern and found that even
18 in that more exposed situation that there is no
19 unacceptable risk to that person. So it follows
20 that if there is no unacceptable risk to people
21 drinking the water right near there within ten
22 years, that there would not be any greater risk
23 to people further away.

24 Anything that's already in the
25 aquifer, any contamination that's already in the

1 aquifer today is going to be evaluated, as Joe
2 said, under both the TRA Comprehensive
3 Investigation and then a couple years after that
4 the WAG 10 Investigation. I think at this time
5 maybe, Larry, can you shed some light on the
6 issue that's been raised here?

7 MR. MANN: Well, there is a history
8 of 40 years of wastewater disposal, i.e.
9 around 1952 when it all started. And we've --
10 we being the Geological Survey, have tracked
11 many of those contaminants as far as eight or
12 nine miles south of the point at which they were
13 injected in the aquifer or exposed to a
14 percolation pond.

15 In that eight-mile distance you can
16 pick stuff up, there is no question about that.
17 The question from a health and safety
18 standpoint, which we have to look at too, is
19 along the leading edge of that plume that is
20 developed in the aquifer with specific
21 contaminants in it, that's a method of detection
22 limit, that's usually five percent or less of
23 any maximum contaminant level set for drinking
24 water by EPA.

25 So yeah, concentrations of

1 contaminants, I think there was a tritium
2 driver there from -- well, in 125 years the
3 tritium would be gone because of radioactive
4 decay, that's in ten half-lives and ten
5 half-lives it wouldn't be there. You wouldn't
6 be able to distinguish it from background
7 concentrations. And tritium does occur
8 naturally in water as well as from the
9 atmospheric testing program.

10 With the other, cobalt and
11 chromium, cobalt has a five year half-life, it's
12 going to be gone. The chromium, I guess, would
13 probably be the real risk driver for anything
14 after 125 years. It's reactive, so it's still
15 going to be in the aquifer, but it will be,
16 number one, diluted and number two, it will be
17 absorbed out, it will be immobilized and attach
18 itself to a rock rather than being in the water.
19 And I think that's what the risk analysis shows.

20 MS. GREEN: But before 125 years.

21 AUDIENCE MEMBER: The thing that
22 really bothers me about -- yeah, the dilution
23 will be the solution for this, but we have all
24 these many, many projects out there, many, many
25 waste things that are going on and if dilution

1 is the solution to all of those, then pretty
2 soon, you know, 1998 or whatever it is rolls
3 around and we do our comprehensive look at what
4 all the different contaminants are doing to our
5 aquifer and we go, oh, gee, we have a big
6 problem. Well, we already know that now. Why
7 are we letting dilution be the solution?

8 MS. GREEN: I think Nolan or
9 someone on the project, I think we need to
10 emphasize the basis for our recommendation is
11 not relying on dilution. We need to emphasize
12 that.

13 AUDIENCE MEMBER: Well, dilution in
14 time. What else is it then?

15 MS. GREEN: I think the other
16 factor that's being heavily relied on is the
17 characteristics of absorption into soil and that
18 type of thing, decay and absorption. And I'll
19 turn it back over to the technical people.

20 MR. GORDON: What we did was we
21 looked at the worst, really the worst place that
22 we could possibly put a well, and it's only as a
23 point of departure to look at other places where
24 you could put wells where dilution becomes a
25 factor. Okay, but we didn't look at dilution

1 beyond the worst place you could put a well.

2 AUDIENCE MEMBER: To me it seems
3 like if you're not going to clean it up, then
4 you're letting dilution clean it up.

5 MR. JENSEN: What we're trying to
6 say is we don't need to let dilution clean it
7 up. It's clean without dilution. It's not
8 posing a risk without dilution. So that was the
9 whole point where dilution occurs. We're not
10 saying it doesn't, but what we try to evaluate
11 is what if someone put a well at a spot before
12 dilution occurred? And what we're finding out
13 is that even in that worst case, it's not a
14 problem or in ten years it won't be a problem.

15 That's not to say that, you know,
16 we like the fact that there is contamination
17 down there or anything like that. In fact, the
18 reason that we're doing this one so quickly and
19 we started this investigation about almost a
20 year before the IAG was even signed, this
21 agreement was even signed, because we knew there
22 was contamination down there and we knew it was
23 a priority and we needed to find out if there
24 was a problem. So we tried to look at the worst
25 case we could to find out if that were a

1 problem, and what we're saying is even in the
2 worst possible case of someone putting a well
3 right there, we think it's okay. In ten years
4 it's not going to be a problem.

5 MR. HOVLAND: Larry, you have
6 looked at quite a few wells out there. What is
7 a typical well screen for a residential well?
8 It's a lot more than 12 feet.

9 MR. MANN: You'd be looking at 50
10 to 100 feet in most of those areas.

11 MR. HOVLAND: The significance of
12 that is with a larger screen there in a
13 residential well you get a lot more mixing of
14 aquifer. With a 12 foot screen at the top of
15 the aquifer there is virtually no mixing, and it
16 would be a very conservative highest
17 concentration.

18 AUDIENCE MEMBER: Isn't that
19 dilution. Isn't that what dilution is?

20 MS. GREEN: No, what we're saying
21 is we didn't rely on it because we used a 12
22 foot screen rather than a 50 foot screen to
23 evaluate it.

24 MR. HOVLAND: That was the point
25 there, with a 12 foot screen you'd have

1 virtually no dilution, thus giving you a very
2 conservative approach to looking at the worst
3 case scenarios with this well.

4 MS. MEYER: I think we should
5 clarify too, it isn't exactly we're not doing
6 anything. The Warm Waste Pond is going to be
7 taken off line shortly here and that's the
8 source of the contaminants.

9 AUDIENCE MEMBER: Why don't you
10 close it down now? You've known about it since
11 when?

12 MS. GREEN: It's in the process.
13 When it was determined to be a problem, there
14 was a request made for funding. The INEL made a
15 request for funding to replace the pond. It's
16 taken this long to do the planning and the
17 permitting, and now construction is taking place
18 this summer. And the construction of the liner,
19 at least, will be completed during the summer.
20 I can't tell you the exact time frame for
21 actually using the lined pond instead of the
22 unlined pond.

23 AUDIENCE MEMBER: So what is in the
24 unlined pond would be moved over to the lined
25 pond or is it going to evaporate?

1 MR. HOVLAND: Actually that's
2 another operable unit. Last year we had some
3 meetings on the proposed plan for the interim
4 action for the Warm Waste Pond sediments.
5 That's currently in the remedial -- part of that
6 Record of Decision and treatability studies are
7 going on right now to work out what is the most
8 efficient way of removing the contaminants.

9 MS. GREEN: And the water that is
10 presently going in the unlined ponds would be
11 diverted to the lined pond.

12 MR. JENSEN: If you went out and
13 looked at that pond right now, it's almost dry.
14 So there's not much water in there.

15 MR. GORDON: I think another point
16 to make here on the ten-year scenario is that
17 the Test Reactor Area is still going to be
18 operating in ten years. So no one is going to
19 be living there and drinking that water even in
20 ten years.

21 AUDIENCE MEMBER: What is in the
22 cold pond?

23 MR. GORDON: The Cold Waste Pond?

24 AUDIENCE MEMBER: Yes.

25 MR. GORDON: It's uncontaminated

1 water. Maybe someone else --

2 MR. HOVLAND: It's basically just
3 cooling water.

4 MR. GORDON: It's cooling water
5 from the reactor.

6 AUDIENCE MEMBER: It must be
7 wastewater otherwise you wouldn't be calling it
8 waste.

9 AUDIENCE MEMBER: It's above
10 groundwater that is used for cooling water.

11 MR. JENSEN: I think it is
12 something like air conditioning units, they pump
13 the water through those to cool down and the
14 heat exchangers in that water is also going in
15 there. But that also monitors that water
16 continually to make sure that there aren't
17 contaminants going in there.

18 AUDIENCE MEMBER: But it says in
19 the little thing that if it carries 85 percent
20 of the total volume of water even though that
21 water is not contaminated, which would also
22 contribute to driving down contaminants, that
23 volume of water.

24 MR. GORDON: Well, it does
25 contribute to the total volume of water, yes.

1 It does not significantly contribute to the
2 driving of contaminants. If we stopped
3 discharging, the contaminants are going to go
4 down within seven years.

5 AUDIENCE MEMBER: If you have a
6 large volume of water, it will be, or won't it?

7 MS. GREEN: Joe, wasn't a risk
8 assessment done assuming that it remained in
9 operation?

10 MR. GORDON: Right. It assumed
11 that we continue operations of the Cold Waste
12 Pond actually for 25 more years. And that's the
13 end of operations and decommissioning of the
14 Test Reactor Area, then the 100 year to control
15 period. So actually assume the Cold Waste Pond
16 operations continue for the next 25 years.

17 Well, similarly we calculated the
18 potential adverse effects from non-carcinogenic
19 contaminants and found those also to be
20 acceptable for both 125 and 10-year scenarios.

21 So in summary, there are currently
22 no unacceptable risks -- well, there are no
23 risks to current residents, obviously, since the
24 site is restricted. And the risk to a
25 hypothetical resident living at the site would

1 become acceptable within ten years.

2 I guess with that, I'll turn it
3 back over to Nolan.

4 MS. GREEN: You'll have an
5 opportunity for more questions and answers on
6 this plan after Nolan does his presentation, he
7 only has a couple more slides. So there is
8 plenty more opportunity for questions and
9 answers.

10 MR. JENSEN: Basically, I'm just
11 going to go through the conclusions now. We
12 already mentioned, based on a risk assessment we
13 don't think we need to do anything to clean up
14 the water; however, recognizing that this was
15 based on a dynamic system and a groundwater
16 model, a computer model that made these
17 predictions, we still need to keep an eye on it.
18 It doesn't mean we just walk away and forget
19 about it.

20 So the recommendation is that we
21 continue to monitor the situation. The
22 regulations, National Contingency Plan, as I
23 talked about earlier also talks about five-year
24 reviews, or it talks about the agencies will
25 need to go back and look at this decision at

1 least every five years. It may happen more
2 often than that.

3 So what we're saying is that even
4 though we're recommending that we don't need to
5 clean up the water, we still need to keep an eye
6 on the situation and review it periodically to
7 make sure that the assumptions that we based the
8 decision on, or the recommendation on, are
9 correct.

10 Maybe I'll give you a real quick
11 idea of what we mean when we say monitoring.
12 This was a question that came up at our meeting
13 last night. Assuming that after public comment
14 that we do go ahead and implement this decision,
15 basically what we will do is develop a plan for
16 monitoring this. What we'll have to do -- and
17 we've talked about it some already, is we'll
18 have to decide what contaminants we need to
19 monitor.

20 Obviously, we already know which
21 ones are of greatest concern. Tritium and
22 chromium are two of those that we need to
23 monitor. We also need to take out of that slide
24 I showed you with all the wells on it, we would
25 pick some of those wells, some key wells, some

1 in the aquifer and some in the perched water in
2 order to keep track of that situation to make
3 sure that it behaves like we expect it will.

4 Also we need to look at the
5 frequency, whether we take samples four times a
6 year, once a year, that kind of thing. And then
7 at what point or what information do we get that
8 helps us decide that, yeah, things behaved as we
9 thought they would, we can stop monitoring now,
10 or on the other hand it didn't behave like we
11 thought it would, we need to go back and look at
12 it again.

13 So that's the idea when we say
14 we're going to monitor, that's the idea that
15 we're talking about.

16 Okay, that's it. Any other
17 questions?

18 AUDIENCE MEMBER: Is it okay if I
19 ask a question?

20 MS. GREEN: I was going to say for
21 the general question and answer session, if you
22 could use the microphone.

23 AUDIENCE MEMBER: On page A-5 it
24 says the Warm Waste Pond is currently used only
25 for disposal of reactor cooling water containing

1 low level radioactivity. And I would like to
2 know how low is low. There is not anything else
3 that tells us what that means.

4 MS. GREEN: Nolan, do you have
5 information on that current disposal?

6 MR. JENSEN: Well, the point that I
7 was trying to make was in 1970, I believe it
8 was, one of the other key contaminants,
9 chromium, they stopped using that. What
10 chromium was used for was it was a rust
11 inhibitor in the cooling process. So that
12 cooling water had chromium in it. They stopped
13 using chromium in 1970, I think -- wasn't it?
14 1972 something like that. So there is no more
15 chromium even going into the pond.

16 There used to be three reactors
17 running, now there is only one, so just based on
18 the fact that there are fewer operations going
19 on, there are fewer contaminants going in. But
20 I have also talked to people about is that the
21 amount of contaminants, radioactive
22 contaminants, in that water has even been
23 reduced through a treatment process. But I
24 don't know, off the top of my head, how much is
25 treated. It used to not go through that

1 treatment process.

2 MS. GREEN: Do we have that
3 information in the RI?

4 MR. GORDON: It's in the RI Report.
5 Like tritium information there is between 100
6 and 200 curies per year discharged to the Warm
7 Waste Pond over the last few years.

8 MS. GREEN: Over how many gallons?
9 Did you want the total amount or were you
10 looking at concentrations?

11 AUDIENCE MEMBER: Well, I was
12 looking at cesium.

13 MS. GREEN: Concentrations of
14 cesium coming out of the water?

15 MR. SMITH: Lisa, while they are
16 looking that up, can you explain what a RI
17 Report is? I'm not sure everyone knows what
18 that report is.

19 MS. GREEN: I'll put my DOE hat on
20 again. An RI is a Remedial Investigation
21 Report. We have copies on the back table that
22 were developed for each of the three projects,
23 and the RI report summarized all of the data
24 that was used to make the recommendation to
25 calculate the risk and it also explains how the

1 risk was calculated and summarizes that.

2 MR. JENSEN: That's another good
3 point. This proposed plan, the smaller document
4 that you all received in the mail, if you're on
5 the mailing list, that is just a condensed
6 summary of the Remedial Investigation Report.
7 The actual report is a lot bigger and has a lot
8 more information in it. Where is the closest --
9 like Linda mentioned, those reports are located
10 in Twin Falls.

11 MS. BAIRD: The official repository
12 is in the Twin Falls Public Library, but we also
13 have copies of all of those documents in our
14 office as well.

15 MR. GORDON: Going back to your
16 question. Over the last few years there have
17 been about ten million gallons per year
18 discharged in the Warm Waste Pond. Our number
19 for 1990 for tritium -- I mean for cesium-137
20 was zero. For the year before it was .01 curies
21 of cesium-137, before that it was .02. I mean
22 it essentially has dropped off.

23 MS. GREEN: This is the question
24 and answer session for the Perched Water System
25 for TRA. Before we move into the official

1 comment period, if you would rather not come to
2 the microphone, please feel free to write your
3 question on a card and raise your hand and Reuel
4 Smith or Mike Coe will collect the cards and
5 bring them up to the appropriate person to
6 answer the question.

7 If would you like to use the
8 microphone, please feel free to do so. I just
9 ask that you please provide one question at a
10 time so that we can answer the first one before
11 we go on to the second one. Do we have any
12 questions, any more questions on the Perched
13 Water Proposed Plan?

14 With that, I guess we'll move on to
15 the oral comment portion of this meeting to
16 receive formal comments for the record on the
17 Perched Water Proposed Plan.

18 During this portion of the meeting,
19 the agencies will listen to your comments, but
20 we will not respond to them tonight. They will
21 be responded to in the Responsiveness Summary
22 that will eventually be in the Record of
23 Decision after a decision has been reached.

24 I remind you again that a tape
25 recorder is in the back for anyone who wants to

1 make a comment but wishes to do so in privacy.

2 If somebody makes a statement which
3 DOE, EPA or the State would like some
4 clarification about, or would like additional
5 information to clarify what the comment is, we
6 may ask you for some clarification. This is
7 just to make sure that we understand the comment
8 so that we can evaluate it for the final
9 decision.

10 Reuel, do you know how many people
11 have signed up to make official comments?

12 MR. SMITH: We had two question
13 marks so far.

14 MS. GREEN: I guess I'll remind you
15 that written comments have the same weight as
16 oral comments, and any comment that we receive
17 by the close of the comment period on August 5th
18 will be considered in making the decision and
19 will be responded to in the Responsiveness
20 Summary. If you would like to make an oral
21 comment and can't fit all of your comments into
22 the five minute period, or think of something
23 after you go home, please feel free to submit
24 the additional written comments prior to August
25 5th.

1 With that, can I see a show of
2 hands for people who would like to make oral
3 comments for the record. So we have one person.
4 Would you like to make your comment
5 at this time?

6 AUDIENCE MEMBER: My name is
7 Carolyn Mondo from Burley. I'm speaking on
8 behalf of the FOCUS area group. Please bear
9 with me, these are kind of like notes that I'm
10 reading from.

11 We would like to see the
12 information on how low are low levels of
13 radioactivity which is in the brochure instead
14 of having it say low. It would be more helpful
15 for us that can't run down to Twin Falls and
16 look up a bunch of stuff.

17 We feel that continued use of the
18 Warm Waste Pond is the clearest indication of
19 INEL's misguided priorities. Not only is INEL
20 continuing to add radioactive contaminants to a
21 cleanup site, which has been identified for over
22 five years, but also the additional water will
23 continue to reach previous contaminations
24 further down into the aquifer.

25 Moreover, the Environmental

1 Protection Agency and the State of Idaho are
2 remiss in their respective enforcement
3 responsibilities for not closing down the Test
4 Reactor Area pond.

5 EPA and the State would have full
6 recognition, RCRA has the mixed waste sites, and
7 therefore under their jurisdiction the plan
8 fails to mention that the TRA has 49 solid waste
9 management units. These include leaching ponds,
10 underground tanks, rubble piles, cooling towers,
11 waste injection wells, trench drains and
12 assorted spills where hazardous and mixed wastes
13 exist. A reader of INEL's Plan might be led to
14 believe that the Warm Waste Pond and the
15 contaminated perched water are the only problem
16 areas at TRA. Additionally, the pond has been
17 in continuous use for 35 years.

18 We question DOE's characterization
19 of the size to the perched water contamination
20 plumes because of the location and depth of the
21 monitoring wells. The State of Idaho's review
22 strongly suggests that wells along the north and
23 northeast margin of the network are too deep to
24 intercept or represent water levels in the deep
25 perched water zone. That is, the deep perched

1 water zone may extend farther to the north and
2 northeast than previously recognized by DOE.

3 The Plan's listing of contaminants
4 fails to list iodine-129 and plutonium-238, 239
5 and 240, which were found in the TRA leach pond
6 plankton in concentration ranges from 40,000 to
7 400,000.

8 Due to iodine-129's 17 million year
9 half-life and plutonium's 24,000-year half-life,
10 these isotopes are considered permanent
11 contaminants in the environment by EPA.

12 Readers of the Plan deserve more
13 information than they exceed federal safe
14 drinking water standards or a footnote stating a
15 standard of 4 millirem per year. The standard
16 for cesium-137 which is not stated in the
17 brochure is 200 picocuries per liter. This
18 places cesium-137 1,315 times over the drinking
19 water standard. Americium-241 is 140 times
20 over, strontium-90 is 570 times over, and
21 tritium is 92 times over the drinking water
22 standard.

23 TRA lies immediately less than two
24 miles up gradient to the Big Lost River.
25 Considerable uncertainty exists as to

1 contaminant transport time within the aquifer
2 due to the existence of lava tubes, etc., in a
3 very non-homogenetic geology of the Snake River
4 Plain Aquifer. Moreover, DOE's contention that
5 there is no current use of the perched water or
6 contaminated Snake River Aquifer in the vicinity
7 of TRA and that only considered use of the area
8 in 125 years is totally unjustified.

9 Plutonium-238, 239 and 240
10 concentrations in the TRA leach pond as
11 previously cited has been studied at length in a
12 1987 INEL report. This report stated that the
13 highest plutonium concentrations was found in
14 net plankton.. Plankton concentration ratios
15 ranged from 40,000 to 400,000 for the plutonium
16 isotopes and varied with sampling dates. These
17 values reflect to efficiency with which
18 plutonium is taken up by plankton.

19 The plutonium figures are relevant
20 when considering that the migratory water fowl
21 are eating the plankton and moving off site, and
22 potentially into Idahoans' diet. Two other DOE
23 sites, Savannah River and Oak Ridge, have had
24 problems containing radioactivity on site.

25 The decision by the state,

1 DOE-Idaho and EPA to do nothing on interim
2 actions on the TRA perched water is an affront
3 to common sense and demonstrates blatant
4 disregard for Idaho's most valuable resource,
5 groundwater. Contaminated water in the perched
6 zones must be pumped and treated to minimize
7 further migration into the rest of the aquifer.
8 The federal government must never again be
9 allowed to foul our waters and just walk away.
10 Monies currently being channeled into nuclear
11 materials production would more than adequately
12 fund environmental restoration such as a pump
13 and treat.

14 MS. GREEN: Ma'am, we have a
15 clarification.

16 MR. HOVLAND: We have a point or
17 two we want to get clarified. In the 1987 INEL
18 Report, so we can address this comment, do you
19 have the specific reference for that and which
20 pond specifically?

21 AUDIENCE MEMBER: On the plankton?

22 MR. HOVLAND: On the plankton.

23 AUDIENCE MEMBER: What I have is
24 some numbers DOE-Idaho-12111 at 39.

25 MS. GREEN: Is there anybody else

1 who has changed their mind and would like to
2 make an oral comment for the record?

3 Okay, if there are no other
4 comments to be made at this time, why don't we
5 take about a fifteen minute break before we
6 start the second half of this meeting.

7 (A recess was taken.)

8 MS. GREEN: If anybody is
9 interested, there is a copy of the Record of
10 Decision on a separate action, the Ordnance
11 Interim Action, if you'd like to see an example
12 of a Record that describes the cleanup that will
13 be undertaken for the ordnance remedial action.

14 It also includes the Responsiveness
15 Summary. So if you want to see an example of
16 how comments are incorporated and responded to
17 in a cleanup decision, there are copies of the
18 Record of Decision for the ordnance project in
19 the back of the room.

20 From here on out we'll be talking
21 about the Motor Pool Pond and the Chemical
22 Evaporation Pond Proposed Plans. We have
23 combined these two projects because they are
24 similar in several ways. They are both
25 relatively small units. They are both pond

1 sediments, ponds that are no longer used.

2 We used a similar approach in
3 evaluating them, and we're coming forth to the
4 public with the same proposal of No Action for
5 both of them.

6 I would also like to reintroduce
7 representative managers for both of these sites,
8 for EPA and the State DEQ. Sitting to my right
9 is Dave Frederick. He's the manager for the
10 Motor Pool Pond project. To his right -- I
11 better look next time. Sitting to my right is
12 Tom Stoops, the project manager for the Chemical
13 Evaporation Pond, and to his right is David
14 Frederick, the manager for the Motor Pool Pond.
15 On your far right end of the other table is
16 Howard Blood, who is the EPA manager for both of
17 these projects.

18 With that, Nolan, I'll turn things
19 back over to you. Nolan is going to give you a
20 very brief presentation summarizing the Motor
21 Pool Pond investigation, and then we'll have an
22 opportunity for questions of clarification on
23 his project. Then we'll move on to a
24 presentation on the Chemical Evaporation Pond,
25 followed by a very brief opportunity for

1 questions of clarification. Then we would like
2 to throw it open to more general questions and
3 answers on either one of these two
4 investigations.

5 After all of those opportunities
6 for questions and answers, then we will have the
7 formal comment period to receive verbal comments
8 on both of the projects. So with that, Nolan,
9 take it away.

10 MR. JENSEN: Thank you. I got to
11 be involved with both of these two projects so
12 you have to hear me again.

13 Like Lisa said, the next two
14 projects are very similar. They are both ponds,
15 or what used to be ponds, and now we're looking
16 at the sediments in those ponds to find out if
17 those sediments pose a risk. So again, that's
18 what the bottom of this slide points out is that
19 we're focusing on those sediments in the ponds.

20 This first one is the Motor Pool
21 Pond at CFA. Here is a photograph of it. This
22 photograph was just taken a couple weeks ago.
23 It's just a small pond. It was taken out of use
24 in 1985, so as you can see, there is no water in
25 there any longer. This sign right here, if you

1 can see that, is each of the sites that are
2 going to be investigated under the agreement
3 that I talked about earlier. The INEL has one
4 of these signs placed there to point it out.
5 That's about it on the pond.

6 Let me talk for a minute about what
7 went on here. This is the service station out
8 at the Central Facilities Area. The Central
9 Facilities Area is kind of the central location
10 that has a lot of administrative functions for
11 the entire INEL. It has things like the
12 warehouses there, the central warehouse, there
13 is a cafeteria, a large cafeteria, several
14 functions. One of those was this service
15 station for the fleets and the equipment out
16 there.

17 As you can see, it's a little bit
18 bigger than the normal service station you have
19 here in town, but that's the kind of function
20 that it served.

21 What this is a picture of one of
22 bays insides of the service station. And as the
23 vehicles and equipment were brought in for
24 service to change the oil and that sort of
25 thing, contaminants were washed off or fell off

1 the vehicles and went down into this grate
2 inside. Then also on the outside of the
3 building, there was this wash area, a wash bay.
4 As equipment was washed here, the wash water
5 went into this grate, it went into a sump, the
6 sump then fed a pipeline. This is the building
7 here, the service station, and the pipeline from
8 those two sumps came out here and discharged
9 into this ditch right just back behind -- you
10 can't see it, but it was right in this area,
11 then it flowed through this ditch, and then
12 again into the Motor Pool Pond. So that is how
13 the contamination got there.

14 Now, what was done was several
15 samples were collected of the sediments in the
16 pond. They were collected between 0 and 15
17 feet. There were 51 samples collected. That's
18 essentially what was done.

19 What we found was, again, after
20 going through the process that was described
21 earlier, this is the list of contaminants, and
22 the ones that were found to pose the greatest
23 risk and the key ones are the ones that are
24 highlighted here.

25 So basically now we've answered

1 that first question: What is out there?

2 Now, the next question is: How bad
3 is it? What was done to evaluate the risk, was
4 first of all, we looked at both the risk to
5 workers at the Central Facilities Area and then
6 we also looked at the risk of someone who would
7 live there in the future, someone who would
8 build a house there. In both cases what we
9 looked at was what would be the risk to that
10 person if they inhaled the sediments in the pond
11 if they were blown up for some reason, if it
12 came into contact with your skin, or what would
13 happen with soil ingestion? We say eating the
14 dirt, but however -- also direct exposure to the
15 contaminants, the radioactive contaminants.

16 Should I clarify soil ingestion?
17 Did I make that confusing? That's basically if
18 you get dirt on your hand, if you were to eat
19 something and your hands would get on your
20 sandwich, that kind of thing. Any way that you
21 could actually get those sediments into your
22 body, that's what we're talking about.

23 What we found was that for the
24 current situation out there, for the workers at
25 the site, for carcinogenic risk, cancer causing

1 risk, that comes out to about one in one
2 million, the risk range.

3 Now, looking into the future, in
4 the case that someone could go there and live
5 and live at the pond, again, those same pathways
6 were looked at, the inhalation, the dermal
7 contact, the same pathways, if someone were to
8 go out there and live, we looked at both 100
9 years in the future and 30 years in the future.

10 After doing the calculations for
11 the cancer-causing contaminants, as you can see
12 for the 30-year time frame it falls right in
13 there. I don't remember the exact number, but
14 you can see for the 100 years they are about the
15 same, and they fall within what is considered to
16 be the acceptable range by the federal
17 regulations. That's for cancer causing
18 contaminants.

19 For the non-cancer-causing
20 contaminants, or the toxic contaminants, it fell
21 below the hazard index of one. So again,
22 according to the EPA criteria, it does not pose
23 an unacceptable risk.

24 So as a quick conclusion, based on
25 those risk numbers the agencies are, again,

1 recommending that No Action be taken because
2 there is no unacceptable risk at the site.

3 MS. GREEN: With that, I would like
4 to take a couple minutes to see if anybody has
5 any specific questions to clarify Nolan's
6 presentation that they would like to ask to
7 clear in their minds the presentation.

8 AUDIENCE MEMBER: I have a
9 question. Why did you go down to 15 feet and
10 then stop? Is that the point where you found no
11 more contaminants? Is this a number that
12 somebody picked?

13 MR. JENSEN: Nick, you took those
14 samples, right?

15 MR. STANISICH: Yes. That's where
16 the basalt begins at 15 feet, some places it's
17 closer, some places -- the maximum extent of the
18 sediments is 15 feet, sometimes it's only a
19 couple feet.

20 MR. JENSEN: Where they hit the bed
21 rock.

22 Anything else?

23 MR. GREEN: There will be an
24 opportunity for general questions and answers
25 after we complete the Chemical Evaporation Pond

1 presentation here. Thank you, Nolan.

2 With that, I would like to
3 introduce Randy Bargett. Randy is the Waste
4 Area Group 5 manager for EG&G Idaho. And the
5 Chemical Evaporation Pond is within Waste Area
6 Group 5, so he's going to present the
7 information to support our proposal on the
8 Chemical Evaporation Pond.

9 MR. BARGETT: As Lisa mentioned,
10 I will be talking about Operable Unit 5-10, the
11 Chemical Evaporation Pond at the Auxiliary
12 Reactor Area, which is contained within Waste
13 Area Group 5. At the Motor Pool Pond this
14 investigation is confined to the sediments that
15 were there but are not in the pond at this time.

16 This is a photograph of the
17 Auxiliary Reactor Area 1. The Auxiliary Reactor
18 Area is composed of four different facilities.
19 This is one of the facilities within that area.
20 These are two of the buildings there. This is
21 the building that actually discharged to the
22 pond between 1971 and 1988. This picture was
23 taken when the pond was in operations.

24 If you notice here, you'll see that
25 the pond does have some watermarks, the

1 vegetation is green, denoting that it was
2 putting water out there and the vegetation was
3 feeding off the water and some of the wastes
4 that were in it.

5 This is a schematic of the area.
6 And as I mentioned, these are those two
7 buildings, Building 627 housed -- during that
8 period of operation of the Evaporation Pond --
9 housed print shops, materials testing lab and a
10 radiological lab. And water was discharged in a
11 300 foot pipe to the Chemical Evaporation Pond
12 here. And from our sampling, we noticed --
13 you'll see the star, an area of about 100 square
14 feet that did have the highest concentration of
15 contaminants.

16 This is another photograph of the
17 pond. If you recall, the previous photograph
18 where the green vegetation was, this was taken
19 about two weeks ago -- you'll see the vegetation
20 now has died. There has been no discharge to
21 the pond since 1988. The area where that star
22 was in the previous schematic was right here.
23 This area here 100 square feet -- excuse me, the
24 area of the star right here is about 100 square
25 feet and right in here is an area where we

1 noticed the most contamination.

2 This is another view looking to
3 the north, and there is the vegetation there and
4 the building that they feed it. You can see
5 this barn here where the pipeline was buried
6 that fed into this area right here.

7 From this point on the
8 presentations are very similar to the Motor Pool
9 Pond. During our site characterization or
10 sampling, we did sample the pond in 1990,
11 approximately 160 samples were taken in 40
12 different locations within the pond area, not
13 just within the 100 square feet, but the pond is
14 actually fairly large as you saw in the previous
15 photographs. Sediments were sampled from the
16 surface to a maximum depth of four feet. That
17 was the top of the basalt. And also the
18 sediments in that area, because the basalt is so
19 close to the surface, averages two feet in
20 thickness. We determined the nature and extent
21 of contamination from that sampling.

22 Another familiar slide. These
23 were the contaminants of concern that we did
24 identify through the risk assessment as a result
25 of the sampling that identifies the screening

1 process in the risk assessment. And the
2 contaminants, specifically radionuclides, are
3 the ones that were risk factors in this project.

4 Again, we used the same risk
5 scenarios: occupational, which is now, and
6 residential at 25 years -- excuse me, 30 years
7 and 100 years to evaluate the risk for a
8 residential population that may live on the
9 site. Evaluating the same pathways, being
10 inhalation of dust, direct exposure to ionizing
11 radiation, contact with your skin or ingesting
12 the soil similar to the way that Nolan described
13 it.

14 By the way, the ARA facilities all
15 have been -- there is nothing working out there
16 at this pond. There are facilities that are
17 scheduled to be dismantled over the next period
18 of time.

19 So there are very few workers that
20 actually go to the site; basically the people in
21 environmental restoration or
22 security-type people, or the people involved in
23 actually decommissioning the facilities.

24 So there is restricted access to
25 the area. The current occupational scenario,

1 which means right now, the risk is two excess
2 cases of cancer in ten million.

3 The future residential scenario in
4 100 years from now, you'll notice the facility
5 is gone. The evaporation pond is no longer in
6 use, and if you set up a residence next to the
7 pond within that facility, the future
8 residential risk will be one excess case of
9 cancer in one million.

10 For the carcinogenic risk, both at
11 the 100-year scenario and the 30-year scenario,
12 both risks fall within the acceptable risk
13 range. At 30 years from now there was two
14 excess cases of cancer in one million, at 100
15 years from now there would be one excess case in
16 one million.

17 In the hazard index for
18 non-carcinogenic contaminants it would be .09
19 and we would expect no adverse health effects
20 from the other contaminants that you saw in the
21 previous slide.

22 So the recommendation of the
23 agencies is no further action, because this site
24 does not pose an unacceptable risk to human
25 health and the environment.

1 MS. GREEN: That it does not pose
2 an unacceptable risk?

3 MR. BARGELT: Does not pose an
4 unacceptable risk.

5 MS. GREEN: Thank you, Randy.
6 Before we move on to the general question and
7 answer session, does anybody have any specific
8 questions of clarification on anything that
9 Randy had in his presentation?

10 With that, I'll open it up to
11 general questions on either the Chemical
12 Evaporation Pond that Randy discussed or the
13 Motor Pool Pond that Nolan discussed.

14 Does anybody have any questions
15 that they would like to ask of the technical
16 folks up here before we begin the formal oral
17 comment session?

18 AUDIENCE MEMBER: My question is
19 the health studies in terms of risk factor.
20 Were they based on effects and risks to adults?
21 Were children considered?

22 MR. JENSEN: Basically, when you
23 look at the hazard index and the risk range that
24 is considered to be acceptable in the
25 regulations, those numbers are established based

1 on if, like, infants were exposed to that. So
2 those numbers are established assuming that
3 already. Did that make sense?

4 AUDIENCE MEMBER: Yes.

5 MS. GREEN: Any other questions out
6 there before we open it up to receive formal
7 oral comments on both of these plans?

8 Okay. With that, let's get
9 started on the portion of the meeting that is
10 designed for you to provide your oral testimony
11 to DOE, EPA and the State regarding both the
12 Motor Pool Pond and the Chemical Evaporation
13 Pond Proposed Plans.

14 Again, as in the Perched Water
15 session of the meeting, we'll listen to your
16 comments, but will not respond to them tonight.
17 That will be done in the Responsiveness Summary
18 after we have had an opportunity to evaluate
19 those comments and their impact and incorporate
20 them into a decision.

21 If someone makes a statement for
22 which you folks would like additional
23 clarification, additional information to clarify
24 the comment, we will be asking the commentor
25 for clarification so we can be sure that we

1 understand that comment.

2 Again, for the record please state
3 your name and spell it and identify which plan
4 you're making your comments on before you make
5 your comments.

6 Reuel, do we have people identified
7 who would like to make oral comments?

8 MR. SMITH: I believe it's the same
9 question marks. Some may have decided to
10 comment during the presentation.

11 MS. GREEN: With that, I would like
12 to see a show of hands for those of you who
13 would like to make formal oral comments on
14 either the Chemical Evaporation Pond or the
15 Motor Pool Pond. So we have one person.

16 Since you're the only person and
17 there is no question of fairness to others,
18 please feel free to read your entire thing.

19 AUDIENCE MEMBER: My name is
20 Carolyn Hondo. I'm from Burley, and I'm
21 speaking on behalf of the organization FOCUS.
22 The one comment that we had was concerning the
23 Motor Pool Pond. We felt like the PCB,
24 Aroclor-1260 -- I can't pronounce that word, in
25 concentrations of 1,470 micrograms per kilogram,

1 or I believe that's also parts per billion, that
2 alone would dictate exhuming contaminants to
3 prevent further migration to the aquifer, and
4 that's what we would like to see done. Thank
5 you.

6 MS. GREEN: Is there anybody who
7 has changed their mind and decided to make oral
8 comments on either the Chemical Evaporation Pond
9 or the Motor Pool Pond?

10 With that, I would like to remind
11 you that the comment period remains open until
12 August 5, 1992, and you're free to submit
13 written comments up until that time. Again,
14 written and oral comments receive equal
15 consideration.

16 I would like to thank you all for
17 coming out tonight. And I appreciate the
18 exchange of information, not only in the
19 meeting, but the workshop sessions. I
20 appreciate your involvement, and look forward to
21 seeing you at our next visit here.

22 Thank you and good night.

23

24 (The hearing concluded at 8:45 p.m.)

25

PERCHED WATER, MOTOR POOL POND AND
CHEMICAL EVAPORATION POND PROPOSED PLANS

BOISE, IDAHO
July 22, 1992
6:30 p.m.

SPEAKERS

Lisa Green, DOE-IDAHO
Kolan Jensen, DOE-IDAHO
Joe Gordon, DAMES & MOORE
Randy Bargett, EG&G IDAHO
Dave Hovland, DEQ
Dave Frederick, STATE OF IDAHO
Linda Meyer, EPA
Peter Sinton, DAMES & MOORE

NANCY SCHWARTZ REPORTING
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1 BOISE, IDAHO, WEDNESDAY, JULY 22, 1992, 6:30 P.M.

2

3 MS. GREEN: I would like to welcome
4 everyone to tonight's meeting. We're glad you
5 were able to make it tonight, and we look
6 forward to a productive meeting.

7 My name is Lisa Green. Tonight I
8 will be serving a dual role. First, I will be
9 acting as a moderator for the meeting, and as a
10 moderator my job is to move us through the
11 agenda in a timely manner and make sure that
12 everybody who would like to participate gets
13 that opportunity.

14 The other role I'll be playing
15 tonight is remedial project manager for
16 DOE-Idaho. In that role I'll be helping to
17 answer some questions on the projects. I'll try
18 to indicate those times when I'm putting on my
19 DOE hat, otherwise I'll be the moderator.

20 We have two desired outcomes for
21 this meeting tonight. The first is to gather
22 public comment on proposed plans for the
23 projects that you've seen at the back of the
24 room earlier this evening. This is where at
25 this time in the project DOE, EPA and the State

1 of Idaho have come together on a technical
2 recommendation for these three projects. And
3 we're now bringing it forward to the public to
4 seek public input on that recommendation, and
5 the input will be used in evaluating what the final
6 decision for each of these projects will be.

7 The second goal of the meeting is
8 to give you an opportunity to ask questions and
9 for us to inform you about details of the
10 projects that you're interested in and also to
11 describe how they fit into the broader scope of
12 the INEL cleanup efforts.

13 With that, in summary, we're here
14 to listen to each other and the basic purpose
15 tonight.

16 Let's take a look at the agenda
17 that you received when you entered the room
18 tonight. As you can see, we have three topics
19 on tonight's agenda. The first topic is the
20 Proposed Plan for Perched Water at the Test
21 Reactor Area.

22 Following that presentation, we'll
23 have a question and answer session to provide
24 any information that you'd like to have
25 explained in greater detail.

1 Then after we have completed the
2 informal exchange of questions and answers,
3 we'll provide a session to hear your official
4 verbal comments on the Perched Water Proposed
5 Plan.

6 After a short break then we'll move
7 to the second part of the meeting, which is to
8 discuss proposed plans on the Motor Pool Pond at
9 the Central Facilities Area and on the Chemical
10 Evaporation Pond at the Auxiliary Reactor Area.

11 These projects are very similar and
12 we combine them in response to previous requests
13 from the public to combine project topics when
14 they are similar.

15 At this time I would like to
16 introduce several individuals in the audience.
17 The first individual is Reuel Smith. Reuel is
18 the community relations plan coordinator for the
19 INEL. This is probably also a good time to
20 indicate to everyone that the public comment
21 period on DOE's Community Relations Plan, which
22 has been out for comment for -- two months,
23 Reuel?

24 MR. SMITH: Yes.

25 MS. GREEN: The comment period has

1 been extended to September 1st, 1992, so if you
2 haven't provided us any comments on that plan,
3 which the purpose of the plan is to establish
4 the process for community involvement in the
5 cleanup program, if you haven't provided any
6 comments and would like to, that period has been
7 extended for you to do so.

8 If you have any issues related to
9 the Community Relations Plan you would like to
10 discuss, I think Reuel is your man. You might
11 be able to talk to him on the break or following
12 the meeting tonight.

13 The second person is Mike Coe.
14 Mike is with the Public Affairs Office for INEL.
15 If you have any questions or comments on
16 subjects or issues outside the scope of
17 tonight's meeting, you might speak with Mike.
18 And then if he can't give you an answer tonight,
19 I'm sure he'll get back to you with an answer.

20 Okay. That moves us to question
21 and answer periods. If you have questions that
22 you'd like additional information on, we have a
23 couple different ways that you can ask them
24 depending on your preference. If you'd like to
25 just ask them orally, we've got a wireless

1 microphone that we'd like you to use so that
2 everybody can hear your question, including the
3 court reporter here who is documenting the
4 proceedings tonight. If you'd rather not use
5 the microphone, we have cards on the chairs here
6 that you can write your questions on and they
7 will be -- if you'll hold them up -- Reuel or
8 Mike will pick them up and deliver them to the
9 panel, who can then provide answers for you.

10 Again, after each question and
11 answer period there will be an opportunity then
12 to provide formal verbal comments on the
13 proposed plans.

14 With that, let me introduce the
15 agency representatives that are up here with me.
16 Dave Hovland of the State of Idaho, DEQ is to my
17 immediate right. And Linda Meyer is with Region
18 10 of the EPA. I would like to give both of
19 them a chance to make some brief opening remarks
20 also. Dave.

21 MR. HOVLAND: Thank you, Lisa. I'm
22 the State's INEL technical manager. I'm with
23 the Division of Environmental Quality. My
24 office is in Boise. Tonight I'll also be
25 wearing another hat, and that's the hat of

1 technical lead for the TRA. A person named
2 Shawn Rosenberger is my counterpart in Idaho
3 Falls.

4 Shawn can't be here tonight, but we
5 have a couple of his staff that are going to be
6 working on the other two proposed plans in the
7 audience here. I would like to introduce first
8 Dave Frederick. He's an environmental scientist
9 and he's the lead on CFA. And Tom Stoops who is
10 an environmental scientist, and he's the lead on
11 ARA.

12 I'm also pleased to introduce
13 Mr. Dean Nygard in the front row here. He's the
14 State's manager for the Federal Facilities
15 section, Division of Environmental Quality, and
16 the Federal Facilities section includes INEL.

17 I would also like to mention that
18 the State supports all three proposed plans, and
19 we have been actively involved in every phase of
20 the process up to these recommendations we're
21 making this evening.

22 I really encourage on behalf of the
23 State a lot of public comment. And I appreciate
24 the people that have turned out at the public
25 meeting tonight. The public comments are very

1 important, because we want to make sure that we
2 get your input so that we can work on the
3 Responsiveness Summary and put these comments
4 into the Record of Decision.

5 MS. MEYER: I'm Linda Meyer with
6 the Environmental Protection Agency. And I'm
7 the project manager for the Perched Water System
8 that will be presented tonight, and I'll also be
9 representing the other two plans.

10 As Dave mentioned, we've been
11 involved -- our agency and the State have been
12 involved in these projects since the initial
13 project development and scoping. And this is
14 the recommendation that we're presenting to you.
15 This isn't a final decision. A final decision
16 will be made once your concerns and your
17 comments are addressed. So your involvement in
18 this process is important. So I encourage
19 everyone to participate.

20 MS. GREEN: Thank you, Dave and
21 Linda. With that introductory note, let's move
22 right into the presentation for the Perched
23 Water Project. I would like to introduce Nolan
24 Jensen. Nolan is the project manager for this
25 proposed plan for the DOE.

1 MR. JENSEN: Now, my first question
2 for you tonight is: Where shall I stand so you
3 can see the slides? Way out here? Is that
4 about right? Okay. I'll do my best. That's
5 all I can promise.

6 You've heard a couple of things
7 like CFA, TRA and ARA thrown out tonight. I
8 would like to explain what those are. Those
9 refer to the three projects that we're going to
10 talk about tonight.

11 Three specific projects: The first
12 one is the Perched Water System at the Test
13 Reactor Area, or TRA. The second one is the
14 Motor Pool Pond at the Central Facilities Area
15 and the Chemical Evaporation Pond at the
16 Auxiliary Reactor Area. We'll go into a little
17 more what all those are exactly about later, but
18 just as an overview, this is an aerial
19 photograph of the Test Reactor Area.

20 This is the Test Reactor area, and
21 these are some waste water ponds that we'll be
22 talking about specifically later. This is the
23 Motor Pool Pond or what used to be the Motor
24 Pool Pond at the Central Facilities Area.

25 This is the Chemical Evaporation

1 Pond at the Auxiliary Reactor Area. Those are
2 the three topics for tonight's discussion.
3 Before we get into each topic, though, I wanted
4 to explain a little bit about what is the
5 process we go through with the agencies: DOE,
6 EPA and the State of Idaho. What is the process
7 we go through in coming to a recommendation on
8 whether a particular site needs to be cleaned up
9 or not. So I'm going to take a minute and go
10 through that process.

11 First of all, as you might know,
12 the INEL was placed on what is known as the
13 National Priorities List. That's a list that is
14 established under the Superfund Law, and any
15 site that is deemed to pose potential threat to
16 human health or the environment is scored and if
17 it gets a high enough score it goes onto this
18 list. Rather than go through that scoring
19 process, I'll just tell you INEL made it on the
20 list.

21 Once a site is on the National
22 Priorities List, it needs to be investigated to
23 find out if that potential threat is real, what
24 is out there, and does it need to be cleaned up.
25 So what is done a remedial investigation is

1 conducted. And the remedial investigation
2 answers a couple basic questions.

3 First of all, we want to find out
4 what is there. What kind of contaminants are
5 there? What concentrations? How far spread is
6 it? Once we find that out, we need to calculate
7 what risks those contaminants pose.

8 Once we have gone through that, we
9 have made the calculations, come to a consensus
10 on what should be done or what we think should
11 be done, the three agencies come to the public
12 with a proposal or a recommendation, and that is
13 what is known as the Decision Making Process,
14 and that's where we're at tonight on these three
15 projects.

16 The Remedial Investigation has been
17 done. And now we are coming to the public with
18 our recommendation and want your input on it if
19 you agree with us, if there are other things
20 that you think should have been considered that
21 weren't, or just in general, find out what your
22 concerns are.

23 Once we have received your
24 comments, then we will respond to each comment
25 in a Responsiveness Summary that will all be

1 documented in a document called the Record of
2 Decision, and that Record of Decision is the
3 final document that establishes what will be
4 done at that site.

5 So let me go into that in a little
6 more detail now. Again, the Remedial
7 Investigation answers a couple of questions:
8 What is the contamination out there? How far
9 spread is it? Then what kind of risk does that
10 pose to the human health and the environment?

11 Now, how do we decide if there is
12 a risk posed? Once we looked at the site and
13 collected samples and got information on what
14 contaminants are there, what concentration they
15 are at and how far spread they are, then there
16 are calculations done on risk. And there are
17 two parts of that. First, we look if there are
18 contaminants at the site that are cancer-causing
19 contaminants, carcinogens.

20 There is a federal regulation under
21 the Superfund Law known as the National
22 Contingency Plan, and that regulation is in the
23 Code of Federal Regulations and it establishes
24 for cancer-causing contaminants, it establishes
25 a range of what is acceptable, what risk is

1 acceptable, and it establishes a range between
2 one in 10,000 and one in 1,000,000 incidence or
3 potential incidence of excess cancer. Okay.

4 So the national average is probably
5 up in here somewhere. So this regulation
6 establishes that if this contamination at this
7 time is not going to reach someone and cause a
8 potential risk in this range or below, it's not
9 a problem. If it's above that, then it is a
10 problem and then cleanup needs to be considered.
11 Now, that's for the carcinogens or the cancer
12 causing contaminants.

13 For the other contaminants, things
14 that are not cancer-causing but still have
15 health effects, for example, they may do
16 liver damage, kidney damage, cause rashes,
17 cause heart conditions or things like, maybe,
18 non-carcinogenic, things like that that you all
19 know have an effect, those are considered.

20 What is done in that case is there
21 is what is called a Hazard Index established.
22 Basically what that is is there are studies done
23 on each contaminant and studies done to find out
24 how much of that contaminant it takes to cause
25 an adverse effect. Once it is determined what

1 concentration of that contaminant causes a bad
2 effect, or any effect, then the concentration at
3 the site is compared to that concentration to
4 see if it's a bad enough concentration to cause
5 a problem. Does that make sense?

6 So essentially if we are above this
7 then we need to see if there is a potential
8 adverse effect. If we're below that, then there
9 is surely no adverse effect.

10 So those are the two things that we
11 compared to once the risk is calculated, as
12 compared to these two ranges, to find out if
13 cleanup is necessary. Okay. That's the process
14 we go through.

15 Now, how do these three sites fit
16 into the picture at INEL? Under the Superfund
17 Law there was an agreement established between
18 DOE, EPA and the State of Idaho on how we would
19 approach these investigations and cleanup.
20 Since INEL is such a large facility, we couldn't
21 go out and look at everything at once, so the
22 INEL was divided into what is known as Waste
23 Area Groups.

24 If you're familiar at all with
25 INEL, you know that there are different

1 facilities, I think it's 890 square miles, so
2 the Waste Area Groups essentially correspond
3 with those facilities with the exception of
4 Waste Area Group 10, which is the all
5 encompassing Waste Area Group that fills in all
6 the gaps, and also that Waste Area Group focuses
7 on the Snake River Plain Aquifer in its entirety
8 from an INEL perspective.

9 So the three sites that we're going
10 to be talking about tonight occur at Waste Area
11 Groups 2, 4 and 5. Again, those are the Test
12 Reactor Area, the Central Facilities Area and
13 the Auxiliary Reactor Area.

14 Now, those Waste Area Groups are
15 still not small, there is a lot to look at in
16 each one of those. So the Waste Area Groups are
17 even further divided into what is known as
18 operable units. This gives you an idea of how
19 these fit into the whole scheme of things. The
20 Perched Water System is Operable Unit 2-12, the
21 Motor Pool Pond is 4-11, the Chemical
22 Evaporation Pond is 5-10.

23 And what this is trying to explain
24 to you is that each of these Waste Area Groups
25 will have several investigations, then there

1 will be one investigation for each Waste Area
2 Group at the end to kind of pull everything in
3 that Waste Area Group together and look at it as
4 a whole. Once that has been done, then there
5 will be a final Waste Area Group 10
6 investigation and look at the whole INEL and
7 we'll put together the whole picture from the
8 smaller pieces. So what we're looking at
9 tonight is three of the smaller pieces.

10 That goes through the process.
11 Before we go into talking about the Test Reactor
12 Area and the Perched Water, are there any
13 questions on generally how we're going to
14 approach this?

15 Now, with that background, when we
16 talk about each of these operable units or
17 sites, we'll kind of follow that format. So
18 first of all, I'm going to explain what this
19 operable unit is all about, the Perched Water at
20 the Test Reactor Area. The specific focus of
21 this investigation is to evaluate what is the
22 effect of this perched groundwater, this
23 contaminated perched groundwater, on the Snake
24 River Plain Aquifer.

25 To explain that a little better, I

1 approximate outline of that. These black dots
2 show the different wells that have been drilled
3 at the Test Reactor Area. These are the
4 outlying ponds. These are the wells, several of
5 them to the aquifer, some of them draw water
6 from the Perched Water body, but samples are
7 collected from these wells and that's how we
8 find out what contamination is there and what is
9 out there, what concentrations.

10 Now, let me quickly hold this up.
11 This is a core from a well that was drilled out
12 there, and that's what it looks like in the
13 subsurface. This is a basalt. This is also
14 when you drill down in the Snake River Plain
15 Aquifer that's what it looks like, that's what
16 the rock looks like.

17 Now, like I said, there are
18 interbeds in there and every so often there will
19 be a layer of just regular soil or sand, and
20 that's what those interbeds are that cause the
21 perching. But essentially the aquifer looks
22 like that.

23 Now, if you look at that, you will
24 see that water won't flow through that very
25 well, but what happens is this basalt is also

1 fractured so the water is sitting in those
2 fractures, so it's not like there is a big pool
3 of water or big tank of water down there. It's
4 just the water filling in the void spaces in
5 rocks and sediments.

6 Now, what I've done, I hope, is
7 answered the question: What is out there? How
8 do we find out what is out there?

9 Now, I'm going to turn the time
10 over to Joe Gordon. He's the person that did
11 most of the risk assessment for the Perched
12 Water System, and I'm going to let him tell
13 about that.

14 MR. GORDON: Thank you, Nolan.
15 This flow chart is meant to be sort of a
16 pictorial representation of what the risk
17 assessment process is. The first step is to
18 evaluate the data that was collected out at the
19 site, to evaluate what are the contaminants of
20 concern out at the site. Then you use that data
21 and follow essentially two parallel paths, the
22 toxicity assessment and the exposure assessment.

23 In the toxicity assessment you
24 evaluate what are the relative toxicities of
25 each of the contaminants of concern from both a

1 carcinogenic and non-carcinogenic standpoint.
2 Then over in the exposure assessment, we've done
3 a pathway evaluation where we've looked at how
4 contaminants and water flow through the Perched
5 Water System and into the Snake River Plain
6 Aquifer, and then how people or ecological
7 receptors might be exposed out at the site.

8 Then those two paths come back
9 together in the risk characterization where the
10 exposure and toxic effects are combined.

11 So the first thing there was the
12 data evaluation to come up with the contaminants
13 of concern. The contaminants of concern were
14 arrived at by taking a look at what are the
15 contaminants out at the site, which would
16 contribute to greater than one percent of the
17 risk at the site. So that way we can focus the
18 risk assessment. And the ones that are
19 highlighted there are the ones that turned out
20 to dominate the risk at the site. Those are
21 chromium, cobalt and tritium.

22 The exposure to a resident out at
23 the site was evaluated by developing a
24 hypothetical scenario where someone goes out
25 there after TRA operations -- after the Test

1 Reactor Area operations are completed, which is
2 anticipated for 25 more years, and at the end of
3 the institutional control period someone would
4 actually go out there, install a well down to
5 the Snake River Plain Aquifer directly below the
6 Perched Water System and drink all of his water,
7 irrigate his crops, feed his animals and he
8 would eat all of his -- essentially all of his
9 diet would be derived from the site.

10 Then we also evaluated ecological
11 receptors. Vegetation was evaluated by looking
12 at uptake of contaminants through irrigation.
13 Herbivores were evaluated by looking at their
14 intake of that vegetation, which is taken in the
15 groundwater as well as direct ingestion of
16 groundwater and soil contact. Then carnivores
17 were also evaluated by looking at all these same
18 pathways with the addition of consumption of the
19 animals at the site.

20 Now, in order to do that we
21 constructed a groundwater model whose purpose
22 was to predict concentrations of contaminants in
23 the Snake River Plain Aquifer directly below the
24 Perched Water System. What we did was we put in
25 a hypothetical well right at the site, right

1 below here, and evaluated the flow of both water
2 and contaminants down here and into the Snake
3 River Plain Aquifer, and the well was screened
4 for only 12 feet, so we are only taking the very
5 top of the Snake River Plain Aquifer and
6 evaluating the impacts from that well.
7 Normally you would screen a well for 50 to 100
8 feet for domestic use. So that was a very
9 conservative assumption. It overestimates the
10 health risk.

11 The bottom line here is under the
12 125 year scenario, the risk at the site to a
13 hypothetical resident were one in 179 million.
14 Then as part of EPA's review of the risk
15 assessments they went back and calculated at
16 what point could someone actually go out there
17 and live at the TRA and consume water from that
18 well and still be within the acceptable range of
19 risk, and that was calculated to be ten years.

20 Similarly for nonradioactive toxic
21 effects, the risks for both of those time
22 periods were found to be within the acceptable
23 range.

24 So if there aren't any questions
25 about the risk assessment range, I'll turn it

1 back over to Nolan here.

2 MR. JENSEN: Just to kind of
3 summarize this again. This last slide on the
4 risk assessment was just that currently there is
5 no one out there using perched water. So
6 currently there is no risk because no one has
7 come into contact with it. Then again, like Joe
8 said, in ten years it would be safe. So we're
9 fairly comfortable that no one is going to be
10 out there within the next ten years, so there
11 should be no problem.

12 That's what our recommendation is
13 that based upon that risk assessment, because
14 the calculations show that within ten years
15 there is not going to be a nonacceptable risk
16 out there, we are proposing that we do no
17 cleanup on the Perched Water System. However,
18 because this is based upon a model, a computer
19 model that is predicting concentrations into the
20 future, we think we need to keep an eye on that
21 to make sure our predictions are correct. So we
22 are proposing that we would monitor that
23 situation and also monitor some of the basic
24 assumptions that we used in coming up with this
25 recommendation.

1 For example, one of the things we
2 looked at was the Warm Waste Pond, which was one
3 of the major contaminant sources. That pond is
4 being taken out of service this year. A new
5 pond is being constructed right now that's
6 lined. So the model was based upon the fact
7 that that pond goes away. So we'll come back
8 and review and make sure all the things we base
9 that model on and those calculations do really
10 happen.

11 MS. GREEN: Nolan, before we leave
12 that slide, I'm putting on my DOE hat to
13 interrupt. I think we need to clarify we
14 summarized that there would be no risk after ten
15 years, but you also need to clarify that there
16 is no unacceptable risk right now either, and
17 that the ten year issue is for somebody moving
18 onto the site, drilling a well and living there.

19 MR. JENSEN: Right.

20 This is just to give an idea when I
21 said that we were going to monitor the
22 situation, this is the kind of thing we would be
23 talking about as far as monitoring. And that is
24 we would pick the contaminants that were of
25 concern, at least tritium and chromium we know

1 are a major concern, so we would monitor for
2 those contaminants in the water and we would
3 pick out a number of wells, probably some in the
4 deep perched water, some in the aquifer to make
5 sure that the model calculations are correct.
6 It would also have to discuss how often those
7 samples are collected, whether they are
8 collected once a year, twice a year or what not.
9 Then also we would have to decide, okay, at what
10 point do we stop monitoring or if this happens
11 what do we do about it? What happens if we find
12 out that our calculations were incorrect?
13 Obviously, we would have to come back and
14 revisit that decision.

15 So again, just in summary, that's
16 what we're proposing. We don't think there is a
17 problem out there now, but we also think we need
18 to keep an eye on it to make sure that what we
19 think is correct.

20 Any questions?

21 AUDIENCE MEMBER: My name is Joe
22 Henscheid. I had two questions. One, what if
23 the farmer in your model decided that he wanted
24 to put his well in the perched water table
25 instead of the aquifer?

1 The second question is: What
2 agencies are involved in the monitoring plans
3 that you're talking about? Is this a tri-agency
4 plan or is it strictly the State of Idaho? How
5 is that being done?

6 MR. JENSEN: So the first one is
7 about --

8 AUDIENCE MEMBER: The first one is
9 about the farmer putting a well into the perched
10 water table.

11 MR. JENSEN: One of the things --
12 the perched water, the only reason it is there
13 is because these wastewater ponds are there. If
14 this facility wasn't discharging water, there
15 would be no perched water, and one of the things
16 that was calculated in the modeling was that as
17 soon as these ponds go away, perched water also
18 goes away.

19 AUDIENCE MEMBER: Is that even
20 considering the occasional wastewater or
21 floodwater that runs around there from time to
22 time?

23 MR. JENSEN: This isn't within the
24 100 year flood plan, so I don't think we would
25 have to worry about that. However, the only

1 consideration would be rainwater.

2 AUDIENCE MEMBER: That's the sort
3 of thing I was thinking about.

4 MR. JENSEN: So what we're saying
5 is before that hypothetical farmer could move
6 on, the TRA would have to be shut down and moved
7 off. So basically no one could ever get to the
8 perched water because it would be gone by the
9 time we got there.

10 That's why we were concerned.
11 Okay, let's say the perched water is gone, but
12 what if this guy comes out and drills a well
13 right beneath where it was, beneath where that
14 contamination is? So what we're trying to do is
15 pick the worst case that we could. When someone
16 would actually go out there and drill a well in
17 the worst spot before dilution could occur and
18 if they drew water from that spot, what would be
19 the effect?

20 MR. HOVLAND: If you look at page
21 A-10 of the Proposed Plan, on the right-hand
22 portion of the column, that's the periodic
23 review that EPA and the State will be doing to
24 ensure that the land status and assumptions that
25 are made right now are consistent.

1 MS. GREEN: That's in response to
2 your second question.

3 If I could interject in here?

4 MR. HOVLAND: He was talking about
5 land use. It was for the first question.

6 MR. JENSEN: Do you want the second
7 question answered now or --

8 MS. GREEN: We're obviously in a
9 question and answer session now. If you want to
10 use the note cards, write your question on the
11 note card and Mike or Reuel will bring it up
12 front. Especially if you have a softer voice,
13 if you could use the wireless microphone that
14 Reuel has so that the court reporter can
15 document your question. If you could, ask one
16 question at a time to make sure that we get them
17 all answered and don't miss one.

18 So with that, any more questions?

19 MR. JENSEN: Let me answer your
20 second question. The second question was: Who
21 would be involved with that monitoring? Of
22 course, this whole agreement is conducted by the
23 three agencies: DOE, EPA and the State of
24 Idaho. So we, at least we three, would be
25 involved in that monitoring plan and come to a

1 consensus on what exactly should be monitored.
2 There is other monitoring that goes
3 on. USGS has a whole system monitoring work
4 that they do out there independently from DOE,
5 and also the State of Idaho has what is known as
6 the INEL Oversight office in Idaho Falls and
7 they do a lot of work out there as well.

8 MR. HOVLAND: The production well.

9 MR. JENSEN: That's another good
10 point. The production wells, since that's
11 basically the only water out there, there are
12 some production wells located right here at TRA
13 that draw from the aquifer, and they use those
14 too for both the drinking water at the facility
15 and for all of the industrial operations. And
16 those wells are monitored continually to make
17 sure that water is clean. So there is a lot of
18 monitoring going on.

19 But when we talk about monitoring,
20 we're talking about specifically what monitoring
21 would be done to make sure that our
22 recommendation is correct.

23 MS. MEYER: After this process, we
24 go into a Record of Decision and it's the final
25 decision for the site. And the components of

1 the monitoring plan are going to be summarized
2 in there and then the three agencies will be
3 involved in the monitoring plan as well.

4 AUDIENCE MEMBER: Thank you.

5 MS. GREEN: Any more questions?

6 AUDIENCE MEMBER: I have something
7 to say. It's not a question.

8 If all of your modeling proved to
9 be inaccurate, then you gentlemen will be
10 sitting here asking the same questions that
11 we're going to be asking in the future. So
12 that's what you have to look forward to, so your
13 models had better be correct. But this Perched
14 Water Aquifer that you have there, is that
15 Perched Water Aquifer created by all of the
16 evaporating ponds so therefore if you eliminate
17 the evaporating ponds, you eliminate the
18 aquifer, so there should be basically no problem
19 with any farmer going in there putting a well
20 into an area that has no water?

21 MR. JENSEN: Right. But what we're
22 saying --

23 MS. GREEN: I just wanted to say,
24 he would have to go deeper than the 150 feet, or
25 whatever, you have to go into the Snake River

1 Plain Aquifer.

2 AUDIENCE MEMBER: But it wouldn't
3 be in the perched, that's what I'm getting at.

4 MR. JENSEN: Maybe just on the
5 model, one point of clarification, there is a
6 lot of information out there. USGS has been
7 collecting information for about 40 years, so
8 when Peter Sinton -- this guy right over here --
9 he was the one that did the modeling work, he
10 had a wealth of information to develop that
11 model and check it to make sure that it
12 represented the system that was out there. So
13 before he even started using the predicted
14 capabilities of the model, he made sure it fit
15 what has happened in the past and we know what
16 has happened. So we're fairly comfortable that
17 it's giving us the right answer.

18 AUDIENCE MEMBER: On your risk
19 assessment, how many years is this risk
20 assessment taking place at INEL to determine the
21 risk that is being brought about out there in
22 that area?

23 MR. GORDON: Risk assessment has
24 been going on for a number of years, but the
25 specific Superfund risk assessment that's being

1 done here has only been conducted since 1989
2 when they signed this Federal Facilities
3 Agreement.

4 MR. HOVLAND: 19- what?

5 MR. GORDON: '89, that's when the
6 agreement was signed last year. But this
7 particular risk assessment, this study was
8 started a little over a year ago. So these
9 calculations have been done about the last year.

10 MS. GREEN: If I could put my DOE
11 hat back on to clarify just so you understand
12 that the risk assessment we're talking about
13 here is for this specific project. We're not
14 talking about -- you've probably heard of Dose
15 Reconstruction Projects, that's not what we're
16 talking about, that's a separate project that's
17 ongoing that the State of Idaho is involved in.

18 Any other questions on the Perched
19 Water Project before we start into the formal
20 comment session on this project? There is a
21 pretty thick report back there with a lot of
22 information, and this is your chance to grill
23 the technical people up here.

24 MR. SMITH: Lisa, if we could ask
25 also, if there is not necessarily a question, if

1 there is something else that needs to be
2 explained or if you would like to go back to a
3 previous slide and review something before the
4 comment session, we could certainly do that
5 also.

6 MS. GREEN: Anything on this
7 project is open for discussion here, so if you
8 didn't understand anything, if it wasn't clear,
9 we have people here to answer your questions.

10 Going once, going twice. With
11 that, I guess we'll start into the formal
12 comment session here. This portion of the
13 meeting is designed for you to provide your
14 formal oral testimony to DOE, EPA and the State
15 regarding the Perched Water Proposed Plan.

16 If any of you have brought prepared
17 statements that you would like to have
18 incorporated into the record, you can do that
19 several ways. You can either read it over the
20 microphone or you can provide a copy of the
21 statement to Reuel Smith, who will then have
22 that entered into the record.

23 There is also a tape recorder in
24 the back of the room. If you don't want to give
25 your testimony in front of an audience and wish

1 to do so privately, we have that setup arranged,
2 or if you either choose not to provide oral
3 comments or want to add to the oral comments
4 that you give, written comments receive equal
5 consideration as the oral comments, and we have
6 some comment forms here and the address to send
7 them is printed on the back of the agenda, I
8 believe, and also on the back of the comment
9 form.

10 Do we have anybody signed up for
11 formal comments? Is there anybody else in
12 addition to the person who signed up to comment
13 who has changed their mind and decided that they
14 would like to provide oral comments also?

15 AUDIENCE MEMBER: I signed up.

16 MS. GREEN: Anybody else? We
17 usually limit five minutes in order to ensure
18 fairness, but say what you need to say and take
19 as long as you wish to.

20 Before you do that, I would like to
21 explain what happens to your comments after you
22 have made them. After the comment period has
23 ended, DOE will prepare a summarization of the
24 transcript of oral and written comments, then
25 the three agencies get together and evaluate all

1 the comments and prepare responses to those
2 relevant to the topics in a document. That is
3 called a Responsiveness Summary, and that
4 becomes part of the Record of Decision, the
5 final Record of Decision for the Remedial Action
6 for the project.

7 Everybody who has signed the
8 attendance register at the back of the table and
9 everybody who provides written comments on the
10 project will receive their own copy of the
11 Responsiveness Summary in the mail.

12 Again, we have a court reporter to
13 transcribe the meeting. Before you start your
14 comment, please state your name and spell it for
15 her, and that's the end of the instruction. So
16 if you'd like to provide your oral comment,
17 please step up to the microphone. Anybody who
18 changes their mind after this gentleman gives
19 his comment is welcome to provide a comment.

20 AUDIENCE MEMBER: Good evening,
21 ladies and gentlemen. I'm Michael Ushman,
22 U-s-h-m-a-n, from Emmett, Idaho. And I have
23 been following this for almost two years. As a
24 matter of fact, I agree that the No Action is
25 the best way to go on this, except that I have

1 some problems with the mitigation that comes
2 about through the No Action such as your new
3 facilities that you're installing the lined
4 evaporating new pond to eliminate some of the
5 problems that you had in the Perched Water
6 Aquifer.

7 I don't really believe that the
8 evaporated ponds are the answer to the Warm
9 Water Waste pond due to the krypton-85 and
10 tritium that is present there that does cause
11 air pollution. I think there is one thing that
12 has never been mentioned is the krypton-85 which
13 is present in your residual repository at INEL
14 that you're going to dismantle.

15 There is no mention of what is
16 going to happen with the precipitants in that
17 unit when it is either filled with concrete or
18 removed, which has a lot of radioactive
19 particles in it.

20 I have done some studying on that,
21 and I believe that it is proper to do something
22 underground at the site due to the enormous cost
23 involved in moving that repository, which
24 amounts to \$8 billion. So I think there needs
25 to be a little research there conducted on that

1 facility.

2 On your Cold Water Waste Pond,
3 there is what is known as an ultrasound water or
4 Reclamation Program that has been implemented at
5 China Lake Naval Weapons Center in Ridgecrest,
6 California, and all of this water can be
7 recirculated, reused very feasibly by just
8 cleaning it up. So therefore you can recycle
9 it.

10 On your Warm Water Waste Pond or
11 your warm water from that residual repository, I
12 don't understand why this water cannot be put
13 into an enclosed binary system and recycled
14 continuously on an on-surface containment area
15 where the precipitants can be removed
16 periodically and that way we can eliminate any
17 possibilities of any air pollution from the
18 tritium or the krypton-85.

19 MR. HOVLAND: I might want a
20 clarification. Are you still talking about the
21 Cold Waste Pond or the Warm Pond?

22 AUDIENCE MEMBER: I'm running the
23 two together there. The warm is with the
24 krypton and the tritium, while the cold is just
25 the nonradioactive wastewater along with their

1 sanitary waste pond. All of this water can be
2 actually reused. I think it will be necessary
3 in the future to do this.

4 We talked a little bit -- it's not
5 on here -- but the Motor Pool Area, which I was
6 talking about this evening over here. I'm
7 usually not in favor of cleaning up a site,
8 which was the evaporating pond there, through
9 incineration, but in this case I believe that it
10 would be feasible under a controlled condition
11 to incinerate the soils in that area, but it
12 would have to be a controlled heat burner to
13 bring it down to 99.999, and then the residues
14 mixed with cement and then disposed of. But if
15 you want to contact someone on this ultrasound
16 water reclamation area you can contact a
17 Dr. Dale Bennett of China Lake Naval Weapons,
18 Ridgecrest, California 93555. This is a brand
19 new process.

20 That's all.

21 MS. GREEN: Before you leave the
22 microphone, I want to make sure that we
23 understand the second part of your comment was
24 regarding the CFA Motor Pool Pond?

25 AUDIENCE MEMBER: Yes, because that

1 was included originally in the Cold Water Waste
2 Pond -- I mean not the chemical but the Sanitary
3 Waste Pond. That's where the washing down of
4 all of the trucks and everything went into that
5 particular area. Am I correct?

6 MS. GREEN: I think we have a
7 little confusion here between sites. The first
8 thing I want to say is that the CFA Motor Pool
9 Pond we are having a separate comment session
10 later in probably a half an hour or so after we
11 go through those presentations. If you would
12 like us to put the comment that you just made on
13 the CFA Motor Pool Pond in the record at that
14 area so you don't have to provide it again,
15 we'll do that. I think we probably -- at the
16 break here, as soon as we're done giving
17 comments, I think these gentlemen can clarify
18 the location and relationship of these ponds
19 that you're describing.

20 AUDIENCE MEMBER: Okay.

21 MS. GREEN: Is your comment
22 complete then?

23 AUDIENCE MEMBER: Yes.

24 MS. GREEN: Thank you. Is there
25 anybody else who wishes to provide oral comments

1 for the record this evening on the Perched Water
2 System? Okay.

3 With that, we'll take a brief 15
4 minute break before we begin presentations on
5 CFA and ARA Ponds.

6 (A recess was taken.)

7 MS. GREEN: So let's move on to the
8 second segment of tonight's meeting. From here
9 on out we'll be talking about the Motor Pool
10 Pond at Central Facilities Area and Chemical
11 Evaporation Pond at the ARA.

12 As I mentioned before, we combined
13 them because they are similar. They are similar
14 in several ways because they are both relatively
15 small waste sites and they are both focused on
16 pond sediments, sediments of ponds that are no
17 longer in use anymore.

18 We used a similar approach to
19 characterize and evaluate risk and we've ended
20 up with the same recommendation for both of
21 them, so that's why we kind of combined them
22 together for presentation purposes.

23 At this point I would like to
24 reintroduce the prospective project managers on
25 these sites for EPA and the State of Idaho.

1 Dave Frederick on my right is the project
2 manager for the Motor Pool Pond and Tom Stoops
3 on Dave's right is the project manager for the
4 Chemical Evaporation Pond. Linda Meyer will be
5 representing EPA for both of these projects.

6 With that, I would also -- in
7 order to keep everybody on their toes we're
8 going to change the way we approach the second
9 half of the meeting and that we'll give a
10 presentation on the Motor Pool Pond and provide
11 an opportunity for any specific questions of
12 clarification, then go directly to the Chemical
13 Evaporation Pond presentation. Then we'll open
14 it up for question and answer, general questions
15 and answers on both of those projects before we
16 go into the public oral comment portion of the
17 meeting for both of those plans.

18 With that, I'll turn the floor back
19 over to Nolan Jensen, who is also the project
20 manager for the Motor Pool Pond Project.

21 MR. JENSEN: The second project
22 that we're going to talk about tonight is the
23 Motor Pool Pond. And the thing I would like to
24 point out on this one is what we're focusing on
25 in this project is just the sediments in the

1 pond and what potential risks those sediments in
2 that pond could have to the human health and the
3 environment. So we're focusing on the sediments
4 in the pond.

5 This is a photograph of the Motor
6 Pool Pond or what used to be the Motor Pool Pond
7 right here. And just for your information,
8 again, they stopped using the pond in 1985 so
9 it's dry now. As you can see this little sign
10 right there, this indicates -- if you're
11 interested -- is that at all of the sites at
12 INEL that are going to be evaluated under this
13 agreement, we put signs out there on all those
14 sites, so this is one of them and it has its
15 sign.

16 Now, what happens -- this is the
17 service station at the CFA or the Central
18 Facilities Area. As you can see, it's a little
19 bigger than your normal service station, but
20 essentially it's just a place where they take
21 the fleet buses and equipment out there and take
22 them in for maintenance. So that's the service
23 station.

24 The next picture shows the bays
25 inside the service station where they would do

1 degreasing or greasing and lubrication and that
2 type of thing. As like the grease and oil and
3 things could fall off of the equipment from the
4 vehicles, it would go down into this grate and
5 into a sump. On the outside of the building
6 there is a wash area where they would wash
7 vehicles and buses and equipment, and the wash
8 water would go down into this grate, and again,
9 into a sump.

10 Again, this next photograph
11 shows -- by the way, right back here is where
12 that building is -- and the wastewater would go
13 into those sumps and into a pipe, the pipe would
14 run out to the east here and it flows out into
15 this ditch right behind Bill who is standing
16 here, and it would flow toward us in this ditch
17 and then into the Motor Pool Pond. Again, I
18 think on this photograph the ditch is off to the
19 left. So that's the Motor Pool Pond.

20 What was done to evaluate this to
21 find out what was there is several samples; 51
22 to be exact, were collected of the sediments in
23 the pond. They were collected at various depths
24 from 0 to 15 feet and analyzed for a variety of
25 constituents to determine what was out there.

1 This next slide shows the key
2 contaminants that were found out there. The
3 ones that are in the highlighted areas are the
4 ones that had the greatest risk and were most
5 important in the risk assessment.

6 This next slide shows what was
7 evaluated as far as how those contaminants could
8 get to a person. What was done at this pond is
9 we looked at -- since right now, again, no one
10 can get out there and live right now; however,
11 there are about 1,200 employees at the Central
12 Facilities Area. So for the current situation
13 we looked at the effect that those contaminants
14 could have on workers. What was looked at was
15 what would be the effect of inhalation of those
16 sediments, contact with the skin, ingestion of
17 that soil and exposure to any radiation.

18 So those are the things that we
19 looked at, potential waste to the environment by
20 those sediments. Those same pathways were
21 looked at both for the occupational and then for
22 someone who would live there in the future.
23 Again, we looked at a resident who would live
24 there.

25 An occupational scenario case for

1 the carcinogenic risk, the cancer causing
2 contaminants risk, it showed that about one in a
3 million was the range that the calculation
4 showed. So again, that is within -- well,
5 before we get to that, let's go to the next
6 slide.

7 Now, it's about one in a million
8 for the carcinogenic and for the non-carcinogenic,
9 for the toxic effects. For someone who would go
10 out and live right next to that pond it is about
11 two in 100,000.

12 Now, let's compare that to those
13 risk ranges that are established by EPA. For
14 the carcinogenic risk, you can see for both the
15 30 year scenario and the 100 year scenario that
16 for someone who would live out there it's within
17 the acceptable range established in the federal
18 regulations. And for the non-carcinogenic risk,
19 again, comparing the concentration of
20 contaminants that someone could be exposed to,
21 comparing that with what is known to have an
22 effect, an adverse effect, we're below that
23 level, so about 70 percent of that level. So
24 again, the calculation shows that we're below
25 that acceptable range.

1 So again in the case of the Motor
2 Pool Pond the agencies are recommending that No
3 Action be taken because the risks there are
4 acceptable.

5 Any questions on just that part?

6 MS. GREEN: At this time if you
7 have any questions to clarify anything Nolan has
8 presented in his presentation, please take this
9 opportunity while it's still fresh in your mind
10 and you'll have another chance to ask general
11 questions about this project after the second
12 presentation, but anything that you'd like to
13 ask right now, please feel free to ask Nolan.

14 Thank you, Nolan. With that, we'll
15 move on to another very brief presentation on
16 the Chemical Evaporation Pond. I would like to
17 introduce Randy Bargelt. Randy is the project
18 manager for the Chemical Evaporation Pond. He
19 works for EG&G Idaho.

20 MR. BARGELT: I'll be talking about
21 Operable Unit 5-10, which is the Chemical
22 Evaporation Pond at the Auxiliary Reactor Area.
23 It is contained within the Waste Area Group 5
24 as you saw Nolan present earlier.

25 This investigation also is limited

1 to the sediments that are existing in the pond.
2 This is the photograph of the Auxiliary Reactor
3 Area No. 1. And there are four facilities in
4 the Auxiliary Reactor Area. This is one of
5 those facilities. This right here is the
6 Chemical Evaporation Pond. As can you see, it
7 is wet, and this photo was taken when it was in
8 operation. It was fed through a discharge pipe
9 from this building right here through the pipe
10 here, and you can see the green vegetation
11 showing it was receiving discharged water.

12 This is a schematic of the same
13 area. In Building 627 -- well, during the time
14 this was in operation, this pond was in
15 operation from 1971 until 1988, and Building 627
16 housed a print shop, materials testing lab and a
17 radiological lab during that time. This pond
18 received some of those wastes. This star right
19 here was an area of highest concentration in the
20 contaminants that were found during our
21 sampling.

22 This area here again, if you
23 recall in the previous slide, this is where the
24 green area was. The vegetation has since died
25 off since 1988 because it hasn't received any

1 water.

2 Right here is the end of that
3 discharge pipe and this is the area of highest
4 contamination within another larger area of
5 contamination which is about 100 square feet,
6 which encompasses this area right here.

7 This is another photograph looking
8 north to Building 627 here, and here are those
9 plants here and the discharge pipe was right
10 there.

11 Very similar to the previous
12 presentation that Nolan gave on the pond, we did
13 sampling of the sediments in 1990. We took
14 about 160 samples from the entire pond -- could
15 I see that first photo of the pond -- the
16 samples were taken from this entire area here at
17 40 different locations. They weren't just
18 confined to this area here in the 100 square
19 feet. So we did sample the entire pond.

20 Those samples were taken from the
21 surface to approximately four feet in depth.
22 The reason we stopped at four feet is that's
23 where the top of the basalt was. So we sampled
24 the entire column of sediments. Also out there
25 the sediments average about two feet in depth

1 across the entire pond. By doing this we did
2 determine what we feel was the nature and extent
3 of the contamination.

4 Another similar site you've seen
5 before basically on the risk assessment
6 screening process, these are the contaminants of
7 concern that were evaluated in the risk
8 assessment, and the shaded contaminants here are
9 the ones of most concern that we saw from the
10 risk assessment.

11 We evaluated the same pathways and
12 the same ways of exposure as the Motor Pool Pond
13 from inhalation of any dust that would come off
14 of the pond here, direct exposure to ionized
15 radiation, ingestion of soil or skin contact of
16 the soil or contaminants.

17 Since ARA is a facility that is not
18 being used at this time, there is a lot less
19 workers that are exposed on a daily basis now.
20 So this facility will eventually be torn down.
21 It also has restricted access. So under the
22 current occupational risk scenario, the risk is
23 two excess cancer cases in ten million.

24 For a future resident, if you set
25 up a resident right next to the Chemical

1 Evaporation Pond in 100 years, and notice the
2 ARA facility is now gone, the future risk at
3 that point in time would be one excess cancer
4 case in one million.

5 Both of these risks are well
6 within the acceptable range of risk established
7 by EPA. It was one in one million in 100 years,
8 and evaluated at 30 years there was two excess
9 cancer cases in one million.

10 The hazard index we don't
11 expect to see any adverse effects from the
12 non-carcinogenic contaminants, it's relatively
13 low here.

14 We recommend on this one that
15 there should be No Action since it does not pose
16 an unacceptable risk to human health and the
17 environment.

18 MS. GREEN: Do we have any
19 questions of clarification on this specific
20 presentation before we open it up for general
21 questions and answers about both the Chemical
22 Evaporation Pond and the Motor Pool Pond?

23 I guess we'll open it up for any
24 general questions about either one of these two
25 projects. Again, the remedial investigation

1 reports that document all of the work behind
2 these proposals, they are pretty big documents,
3 and you have an opportunity here to ask
4 questions to the technical folks, questions
5 about both the projects. So please, I encourage
6 you to take this opportunity.

7 Does anybody have any questions on
8 either the Chemical Evaporation Pond or the
9 Motor Pool Pond?

10 If we don't have any questions, I
11 guess we'll begin the part of the meeting where
12 we receive the formal oral testimony on both of
13 these projects. Again, the DOE, EPA and the
14 State will listen to your comments during this
15 time frame. The court reporter will record
16 them, but generally we will not respond to them
17 except if we need clarification on them to be
18 able to understand and evaluate them and respond
19 to them. They will be responded to in separate
20 Responsiveness Summaries for each of the topics.

21 Again, I just ask that you state
22 your name and spell your name and identify which
23 project you're commenting on at the start of
24 your comments.

25 Is there anybody who wishes to make

1 oral comments on either one of these two
2 projects tonight?

3 AUDIENCE MEMBER: Mike Ushman,
4 U-s-h-m-a-n, from Emmett. I may be a little out
5 of line here, but on the Motor Pool Pond and the
6 other pond there, my basic concerns are not with
7 those two ponds but with the new ponds being
8 built. Are we going to discuss the new ponds in
9 this segment?

10 MS. GREEN: There are no new ponds
11 being built to replace these.

12 AUDIENCE MEMBER: You're going to
13 build new evaporating ponds?

14 MS. GREEN: No, these ponds are no
15 longer being used. The Chemical Evaporation
16 Pond is no longer being used. There is nobody
17 using the facilities that discharge to that pond
18 anymore, and they will not be using them. That
19 area is slated to be decommissioned and
20 decontaminated so there is no need for a
21 replacement pond there. At Central, the Motor
22 Pool Pond, I believe -- and Nolan or Bill
23 correct me if I'm wrong, that discharge is now
24 collected in an oil/water separator.

25 MR. PIGOTT: It goes into an

#T3-1
ARA-06

1 oil/water separator, that was done in 1985.
2 Now, the oil is collected and disposed of to
3 meet the current regulations and the liquid goes
4 to the sewage treatment plant. So it's been
5 discontinued since '85.

6 AUDIENCE MEMBER: The pamphlet I
7 got kind of throws me off, because when it's
8 referring to cleaning up these areas, it's also
9 referring in the plan for new lined evaporating
10 ponds to take their places.

11 MS. GREEN: That's at the Test
12 Reactor Area.

13 AUDIENCE MEMBER: Right.

14 MS. GREEN: So you don't have a
15 comment, then, on the Motor Pool Pond or the
16 Chemical Evaporation Pond?

17 AUDIENCE MEMBER: The Motor Pool
18 Pond as he was explaining it, he was saying that
19 they washed the trucks and equipment and the
20 grease and things of this nature, but during
21 your past washing of your vehicles you have
22 taken in that area contaminated merchandise to
23 wash the radionuclides from it. Will this
24 practice continue in the new washing area?

25 MR. JENSEN: I'll refer to Bill,

1 again.

2 MR. PIGOTT: What they normally do
3 on construction equipment is they decontaminate
4 the equipaent in an area where they are working,
5 you get it down to as low level as they can
6 possibly get it with the instruments that they
7 measure with. But as you know, in any kind of
8 construction equipment there is little cracks
9 and crevices up there that may contain some dirt
10 that may contain some radioactive material and
11 there is still the possibility of not getting it
12 all, although there it would be extremely low
13 level.

14 AUDIENCE MEMBER: I think this
15 should be brought up in your narration on this
16 that it has been practiced in the past of
17 decontaminating radioactive materials and
18 equipment in that area through washing, which
19 are collected in your collecting basins and
20 things of this nature, which would be in your
21 oil scrubbers and things like this.

22 MS. GREEN: With that, if there is
23 no other oral comments on either of these plans,
24 I would like to just remind you that the comment
25 period is open until August 5th, 1992. Please

1 feel free to submit any additional written
2 comments prior to that time.

3 I would like to thank you all for
4 your participation here tonight. We look
5 forward to your involvement in future
6 activities. With that, thank you and good
7 night.

8
9 (The hearing concluded at 8:20 p.m.)

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UNITED STATES DEPARTMENT OF ENERGY

PUBLIC COMMENT MEETING CONCERNING PROPOSED
CLEANUP PROJECTS AT THE PERCHED WATER SYSTEM
BENEATH THE TEST REACTOR AREA, MOTOR POOL POND
AT THE CENTRAL FACILITIES AREA, and CHEMICAL
EVAPORATION POND AT THE AUXILIARY REACTOR AREA

ORIGINAL

July 23, 1992
6:30 P.M.
University Inn
1516 West Pullman Road
Moscow, Idaho

Panel Members: Lisa Green, DOE-Idaho
Nolan Jensen, DOE-Idaho
Joe Gordon, Dames & Moore
Dave Hovland, DEQ
Linda Meyer, EPA

Also Present: Tom Stoops
Dave Frederick
Randy Bargelt

Presentations: Nolan Jensen, DOE-ID -
Proposed Plan for the
Perched Water System and
Motor Pool Pond
Randy Bargelt, EG&G Idaho -
Proposed Plan for the
Chemical Evaporation Pond

Moderator: Lisa Green, DOE-Idaho

Reported by:
Nancy Towler, CSR

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1 I N D E X

PAGE:

2 Formal Presentations:

3 Perched Water System 9

4 Motor Pool Pond 94

5 Chemical Evaporation Pond 120

6 Formal Comments:

7 Perched Water System:

8 by Ms. Lynn Mineur 73

9 by Ms. Mary McReynolds 76

10 by Mr. Chuck Broscius 80

11 by Ms. Louise Ragelin 87

12 Motor Pool Pond/Chemical Evaporation Pond:

13 by Ms. Lynn Mineur 137

14 by Ms. Mary McReynolds 140

15 by Mr. Chuck Broscius 142

16 Certificate of Court Reporter 149

17

18

19

20

21

22

23

24 Reported by Nancy K. Towler, CSR, Freelance
 25 Court Reporter and Notary Public, States of Idaho
 and Washington, residing in Lewiston, Idaho.

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1 THURSDAY, JULY 23, 1992

2 MS. GREEN: I'd like to welcome everyone
3 to tonight's meeting. My name is Lisa Green.
4 Tonight I'll be serving in a dual role. Primarily,
5 I'll be acting as a moderator. And as a moderator,
6 I'll be helping to move us through the agenda in a
7 timely manner, but also to ensure that everybody
8 who would like to participate has an opportunity to
9 do so.

10 The other role that I'll play off and on
11 tonight is the remedial project manager for
12 DOE-Idaho. And I'll be in that role to help answer
13 any of your questions on these projects along with
14 the other technical people we have with us tonight.

15 We have two major goals here tonight.
16 And the first goal is to gather public comment on
17 the three proposed plans that are out for public
18 comment at this time. We're at a stage in the
19 project where DOE and EPA and the State have
20 reached a consensus on the technical recommendation
21 for these projects. And now, we're bringing them
22 out to the public to get your comments, your input
23 on the technical recommendations. And we will use
24 that in determining what the final decision for
25 each of the projects will be.

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1 The second major goal for tonight is to
2 give you an opportunity to ask us any questions
3 that you might have based on reading the proposed
4 plans or any of the other information on these
5 projects.

6 Let's take a moment to look at the agenda
7 that you may have picked up when you entered the
8 room tonight. As you can see, we have three
9 projects that we'll discuss tonight. The first
10 topic on the agenda is the proposed plan for
11 perched water at the test reactor system -- Test
12 Reactor Area.

13 Following the presentation, we'll have an
14 opportunity for you to ask us questions and get
15 answers from the technical people on that project.
16 And then after all -- after all the questions have
17 been answered, we will take time to receive your
18 formal verbal comments for the record on this
19 project.

20 Then after a short break, we'll move into
21 the second half of the meeting where there will be
22 a presentation on each of the proposed plans for
23 the Motor Pool Pond and the Central Facilities Area
24 and the Chemical Evaporation Pond at the auxiliary
25 reactor area.

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1 Now, these two projects are very similar;
2 and in response to public comment previously that
3 recommended that we put topics together in one
4 meeting where they are similar, we have grouped
5 these two.

6 At this time, I'd like to introduce
7 several individuals in the audience. The first is
8 Reuel Smith. Reuel is at the back of the room. He
9 works as the community relations plan coordinator
10 for the INEL.

11 This is probably also a good time to
12 mention that the public comment period on DOE's
13 community relations plan has been extended to
14 September 1, 1992. And if you're not familiar,
15 this plan is -- establishes the process for public
16 involvement in environmental restoration activities
17 for the INEL.

18 So, if you have any questions or issues
19 related to the community relations plan, you might
20 take this opportunity this evening to speak with
21 Reuel about them.

22 The second person I'd like to introduce
23 is Mike Coe. Mike is -- represents the INEL public
24 affairs office. If you have any questions
25 regarding INEL activities or issues that are not

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1 the subject of tonight's meeting, Mike is available
2 to help get answers to those question.

3 And, Mike, did you want to make a
4 statement about the availability of the site
5 specific plans?

6 MR. COE: Yes. I just wanted to announce
7 that the draft fiscal year '93 site specific plan
8 is now available for comment. The site specific
9 plan basically outlines INEL's environmental waste
10 management plans, activities and opportunities for
11 public participation for the coming year.

12 This year we're making the draft
13 available for public comment so we can incorporate
14 the public comment into the final fiscal year '93
15 site specific plan. If you want a copy, just talk
16 to me during the break or some time; and I'll be
17 sure you get a copy.

18 MS. GREEN: Thank you, Mike.

19 After each of the presentations tonight,
20 you'll have an opportunity to ask questions on
21 them. And we've got -- the court reporter here is
22 recording the proceedings this evening. So -- so
23 that she may hear clearly the questions, we'd like
24 for you to use one of two approaches.

25 The note cards that you see on chairs are

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1 for you to write questions on. And then if you'll
2 raise the note cards in the air, Reuel or Mike will
3 pick them up and bring them up to the front of the
4 room to be answered.

5 The second approach would be to use one
6 of the microphones. I believe we have the wireless
7 mike working this evening so you don't -- you won't
8 need to come up front and use the mike. You can
9 ask the questions from your chair.

10 Again, if you could please try to ask one
11 question at a time so we can answer -- answer the
12 first question before we go on to another one, we
13 would appreciate it.

14 Then after each question and answer
15 period is over, we will begin the formal comment
16 period for receiving oral comments on the projects.

17 With that introduction, I'd like to turn
18 the mike over to a couple of the agency
19 representatives from EPA and the State. On my
20 immediate left is Dave Hovland from the State of
21 Idaho, and to his left is Linda Meyer. And I'd
22 like to give them both a chance to make a few brief
23 opening remarks.

24 Dave?

25 MR. HOVLAND: Thank you, Lisa.

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1 I'm the State's INEL technical manager
2 with the Division of Environmental Quality in
3 Boise. I'll be wearing another hat tonight. I'm
4 also the lead for the TRA area.

5 I have a counterpart named Sean
6 Rosenberger in Idaho Falls. He's not here tonight,
7 but two of his staff are here. And
8 they're going to represent the State on two of the
9 other proposed plans.

10 I'd like to introduce Dave Frederick.
11 Dave's an environmental scientist, and he's the
12 lead for CFA. His other colleague is Tom Stoops.
13 Tom is an environmental scientist, and he's the
14 lead for ARA.

15 I'm also pleased to introduce Mr. Dean
16 Nygard. Dean is the State's manager for the
17 Federal Facility Section in the Division of
18 Environmental Quality, and this includes the INEL
19 site.

20 I'd also like to say that the State
21 supports all three of the proposed plans. The
22 State's been actively involved throughout the
23 entire process leading up to these recommendations.

24 I'd like to encourage public comment. We
25 find it very important to get the public comment at

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1 this time because we're going to be preparing a
2 responsiveness summary and completing a record of
3 decision. And that's all I have.

4 MS. MEYER: I'm Linda Meyer with the
5 Environmental Protection Agency. I apologize to
6 anyone that was -- attended the technical briefing,
7 and Wayne promised he'd be here. So, I hope I
8 don't disappoint you; but I'll be representing the
9 EPA for all three of the projects tonight.

10 I was the project manager for the Perched
11 Water System. I'd just like to reemphasize that a
12 decision has not been made on these projects. They
13 are just recommendations, and your input is
14 important in this process. So, I encourage
15 everybody to participate.

16 MS. GREEN: Thank you, Linda.

17 With that, let's move right into the
18 first proposed plan, the presentation on the
19 Perched Water System at TRA. I'll turn things over
20 to Nolan Jensen. Nolan is the DOE project manager
21 for the Perched Water Project.

22 Nolan?

23 MR. JENSEN: Can you hear this? Okay.
24 If we can get the technology down. Now, first
25 question, if I stand right here, can everyone see?

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1 Can you see past me from both sides? Okay. I'll
2 stay here then.

3 Okay. Like Lisa says, we're going to be
4 talking about three projects tonight. First, the
5 Perched Water System at the Test Reactor Area.
6 You've heard a couple acronyms thrown around
7 already. That's what we're referring to when we
8 say TRA; the Motor Pool Pond at the Central
9 Facilities Area or CFA; and the Chemical
10 Evaporation Pond at the Auxillary Reactor Area or
11 ARA.

12 Let me just throw up a photograph of each
13 of these sites right quick. And this is the Test
14 Reactor Area or most of it any way, the outline of
15 the facility; and these are the wastewater ponds
16 that we'll talk about a little bit later.

17 This is the -- what used to be the Motor
18 Pool Pond before it was taken out of use. And this
19 is the Auxillary Reactor Area number one, and this
20 is the Chemical Evaporation Pond that we'll be
21 talking about or, again, what used to be the pond,
22 where the pond was located.

23 Now, before we talk about these
24 individual sites, in order to get -- kind of set
25 the framework for how we're going to discuss the

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1 sites, what I'd like to do first is just quickly go
2 over with you again the superfund process and how
3 we get to the decisions or the recommendations that
4 we have come to, to bring to you tonight.

5 Okay. Some of you may know at the end of
6 1989, the INEL was placed on what is known as the
7 national priority list. And what that means is
8 that the INEL is now a site that has been deemed to
9 have contamination or potential contamination that
10 could pose a threat to human health and the
11 environment.

12 Once a site is listed on the NPL, then we
13 are obligated to go out and look at the potential
14 contamination and determine what risk it poses and
15 what type of clean up needs to be done.

16 So, this investigation is called the
17 remedial investigation. And the remedial
18 investigation answers a couple of key questions.
19 First, it answers what's out there, what kind of
20 contamination is there, and how much, how far
21 spread is it. And then it answers, okay, what is
22 the risk that that contamination poses.

23 Once we've gone through the remedial
24 investigation, the three agencies come to a
25 recommendation on what they believe the appropriate

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1 action is for that site. Once we have come to a
2 recommendation, we bring that recommendation to the
3 public; and that begins what's known as the
4 decision-making process. And we are at that stage
5 right now. We're coming to the public with our
6 recommendation and asking for your comments on our
7 recommendation.

8 When we receive the comments, we will
9 summarize them and respond to them in a document
10 called the record of decision. And that is the
11 document that formally puts into place the decision
12 for -- for the sites.

13 Okay. One more time, what are we going
14 to talk to you about tonight? Each of the three
15 sites has recently gone through a remedial
16 investigation. And, again, as I mentioned earlier,
17 the purpose of the remedial investigation is to
18 answer these two key questions: What's out there?
19 What kind of contamination is out there? And how
20 bad is it, or what risk does it pose?

21 Now, when we get to the risk assessment
22 process, risk is -- of the contaminant -- was
23 looked at in two ways. First of all, contaminants
24 are looked at, which are known to be carcinogens or
25 potential carcinogens. And so, the first thing we

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1 do is assess the carcinogenic risk or
2 cancer-causing risk.

3 So, the contaminants which are
4 potentially known carcinogens are evaluated to
5 determine what exposure someone would come in
6 contact with. And then that exposure is compared
7 with a risk range, which is established in a
8 regulation called the National Contingency Plan.
9 That's located in the Code of Federal Regulations
10 in forty CFR three hundred.

11 And in that Code of Federal Regulations
12 in the National Contingency Plan, there is a risk
13 range that's established. And that is that a risk
14 within the range of one in ten thousand to one in
15 one million or below, is considered to be
16 acceptable.

17 In other words, if -- if there is a
18 chance of someone incurring cancer in a chance of
19 one in ten thousand or below, then that is
20 considered acceptable, if that makes sense.

21 Okay. After the carcinogenic risk is
22 evaluated, then the toxic or noncarcinogenic risk
23 is evaluated. And noncarcinogenic risk is health
24 effects other than cancer, anything from -- from a
25 heart disease or an organ problem or skin rashes.

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1 whatever, those are the kinds of things that we're
2 talking about with the noncarcinogenic risks.

3 Now that's -- the noncarcinogenic risk is
4 looked at a little bit differently. Rather than a
5 chance of -- of cancer happening or a chance of a
6 health effect happening, what is done in the case
7 of noncarcinogenic risk is EPA and others who study
8 toxic effects of different chemicals or
9 contaminants, they establish what is called a
10 reference dose. And that reference dose is just a
11 concentration of that contaminant which is known
12 not to cause an adverse health effect.

13 And so, what is done is that the exposure
14 from the site that is calculated is compared with
15 that reference dose that is established by EPA or
16 in the literature. And basically, what is done is
17 you divide the concentration at your site by this
18 reference dose. And if it comes out to one or
19 less, then it is considered to not pose an adverse
20 effect. If it is one or above, it may cause an
21 adverse effect.

22 Okay. Now, how are we looking at these
23 sites at the INEL? The INEL is a big place. It
24 has a lot of different sites that we need to look
25 at. Approximately four hundred of the sites out at

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1 INEL are going to be looked at under this
2 agreement.

3 So, tonight we're going to be talking
4 about three of those sites. One, again, like we
5 said, is at the Test Reactor Area. One is at
6 Central Facilities Area, and one is the Auxiliary
7 Reactor Area. These are known as waste area
8 groups. It's just a term we came up with to help
9 cut down the pie into smaller pieces.

10 After we have established waste area
11 groups -- oh, before I move that slide, the first
12 nine waste area groups, one through nine,
13 essentially corresponds to the different facilities
14 out at INEL. And then waste area group ten fills
15 in all the gaps or encompasses all of the
16 miscellaneous units outside of those facilities.
17 And it also focuses on the Snake River Plain
18 Aquifer as a whole.

19 Now, each of those waste area groups
20 is still a pretty large piece of work. So, the
21 waste area groups are further divided into what are
22 known as operable units. And that is something
23 that's discussed also in the regulation, the
24 national contingency plan.

25 And so, what is done is these groups are

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1 further broken down into bite-sized pieces, if you
2 will, in order to focus resources and come to
3 decisions as quick as possible.

4 And so, what we're talking about tonight
5 are three operable units within three waste area
6 groups. So, what the concept is, is that we will
7 look at the individual sites in each waste area
8 group. Once each individual site is looked at,
9 then there will be one investigation done for the
10 entire waste area group. And that's -- these are
11 these down here, the comprehensive investigation.

12 Once the comprehensive investigation
13 look at the entire waste area group is completed,
14 then the waste area group ten investigation will be
15 conducted, which will look at the INEL as a whole.

16 And alsoⁱⁿ again, it will focus on the
17 Snake River Plain Aquifer. Okay.

18 Yes?

19 MR. SMITH: We've had some other
20 folks come since we asked before if people could
21 see the slides. I wonder if we ought to ask that
22 again.

23 MR. JENSEN: Am I standing in front of
24 where you need to be? Why don't you come up
25 here, Reuel; and I'll stand off to the side.

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1 How about right here? Is that better?

2 MR. SMITH: If you can see around me, we
3 can.

4 MS. GREEN: Now you're blocking --

5 MR. JENSEN: Okay. Are there any general
6 questions on the process? What we're going to do
7 now is we're going to talk about each of the three
8 sites tonight. And we'll kind of walk through that
9 process with each one, and you can see how we come
10 to the recommendation.

11 Okay. The first one we're going to talk
12 about is Perched Water System at the Test Reactor
13 Area or operable unit two dash twelve. And what
14 this investigation focuses on is out at the Test
15 Reactor Area -- let's go ahead and put that next
16 slide up -- out at the Test Reactor Area is one of
17 the reactor research facilities at INEL. And this
18 is the -- part of the outline of the facility.

19 And as the industrial operations go on at
20 that facility, the wastewater from those operations
21 is discharged to a series of wastewater ponds.
22 This one right here -- there are three cells -- is
23 what's known as the warm waste pond. That's one
24 that we talked to you about last year. And that is
25 one that is undergoing design for cleanup right

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1 now.

2 The warm waste pond is also the greatest
3 source of contamination. But as these wastewater
4 ponds, as water goes into them, the water
5 percolates through the floor of the pond through
6 the sediment into the subsurface.

7 Let's go ahead and do the next one.

8 MR. BROSCIOUS: Before you change that
9 one, could you just ballparkish describe with your
10 pointer where the plume is in relation to that
11 aerial photo?

12 MR. JENSEN: I -- we'll have a -- give me
13 one more slide, and we'll get to that. I've got
14 one of that. It's not a photograph, but this one
15 isn't big enough anyway.

16 MR. BROSCIOUS: Also, could you mention
17 exactly what's -- what's going on at the -- at
18 those facilities right now?

19 MR. JENSEN: Okay. As far as the
20 industrial operations?

21 MR. BROSCIOUS: Okay.

22 MR. JENSEN: Okay. There were three
23 reactors, and I don't claim to be an expert on what
24 goes on in there; but this was what was known as
25 the Engineering Test Reactor. That's this area

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1 right here. That was a research reactor. This
2 is -- the facility in this area was known as the
3 Materials Test Reactor. And then back in the
4 corner, just off the photograph, is what's known --
5 back in this corner is what's known as the Advanced
6 Test Reactor. This reactor in this reactor
7 operations are ceased. They don't happen anymore.
8 They shut them down. The only operating reactor
9 right now is the Auxiliary Reactor Area back off to
10 the left.

11 MS. GREEN: Advanced.

12 MR. JENSEN: Advanced, sorry. Advanced
13 Test Reactor Area back off to the left. And
14 basically, what that reactor is for, from my
15 understanding, is to test different materials to
16 see how they react or how they react to being
17 bombarded with nuclear energy.

18 Is that -- for those of you who know more
19 than me, is that about right?

20 MR. BROSCIOUS: Is the hot cell in there
21 still functioning?

22 MR. JENSEN: I assume they have hot
23 cells, but I don't know what -- anything about
24 that.

25 MS. GREEN: There are hot cells there,

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1 yes.

2 MR. BROSCIOUS: And is the fuel storage
3 -- water storage test still functioning?

4 MR. JENSEN: I don't know.

5 MS. GREEN: Well, as part of the reactor
6 facilities, there are fuel storage areas in the
7 reactor facilities.

8 MR. JENSEN: Anyway, just -- this is the
9 warm waste pond, again; and this is the cold waste
10 pond. Those are two key ones that I want you to
11 remember for later in the discussion.

12 Okay. So, what happens then is, as the
13 water -- the wastewater goes into these ponds, it
14 percolates into the subsurface. The subsurface is
15 essentially interlayered basalt or lava rock, black
16 lava rock, and layers of soil.

17 And what happens is the water goes
18 through the subsurface. It reaches layers that are
19 less permeable. And as it hits those less
20 permeable layers, the water can't go through it as
21 fast; and so, it slows it down; and it starts to
22 mound up.

23 And so, under each one of these ponds,
24 directly beneath them, there is a shallow perched
25 zone. It's fairly small, directly under each pond.

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1 And then it percolates finally through that layer
2 and goes down. And about 150 feet, there is
3 another layer, which is also less permeable, that
4 slows the water down. And there is a larger
5 perched water body that forms on that layer. And
6 as you can see, the aquifer is about 480 feet deep.

7 Okay. Let's go ahead to the next one.
8 This is the one that Chuck was interested in.
9 That's the Test Reactor Area, again. The warm
10 waste pond, the cold waste pond; and that's the
11 approximate outer extent of the Perched Water
12 System. That is the larger, lower perched water
13 body. It's about a little more than a half a mile
14 across and about three-quarters, maybe nine-tenths
15 of a mile long.

16 MR. BROSCIOUS: Where are the two
17 injection wells in relation to that?

18 MR. JENSEN: The big one is about
19 right -- well, in fact, I think it's that well
20 right there, that black dot. The other one, I
21 believe, is this one right here.

22 MR. HOVLAND: Now, the other one, meaning
23 the Well 53.

24 MR. JENSEN: 53, right. 53 was a shallow
25 injection well that was used for a few years. And

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1 all these other black dots are monitor wells. In
2 fact, we used the two closed injection wells as
3 monitor wells at these sites.

4 MR. BROSCIOUS: And where is Well 65 in
5 relation to that?

6 MR. JENSEN: It's one of those right -- I
7 know it's one of those three.

8 UNIDENTIFIED PERSON: Could you give the
9 dimensions of that again? I missed them.

10 MR. JENSEN: You can see it right
11 there about --

12 UNIDENTIFIED PERSON: No. No, the scale.

13 MR. JENSEN: Well, that's the scale.
14 Just approximately, I think it's a little more than
15 a half a mile this way and a little less than a
16 mile this way. And that's approximate.

17 So, what was done to find this
18 information out, was these different monitor wells
19 were sampled and water levels measured. So, that's
20 how we went about gaining information on what this
21 Perched Water System was all about.

22 MR. BROSCIOUS: In terms of monitoring
23 wells outside of the perched water table area, you
24 show relatively few of them --

25 THE REPORTER: I can't hear him.

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1 MS. GREEN: Could you speak up a bit,
2 sir?

3 MR. BROSCIOUS: I said in terms of the
4 plume, you have relatively few monitoring wells
5 outside of the plume area, especially to the --
6 what I assume is the southeast there. I wonder
7 what evidence you have that that's the limit of the
8 plume.

9 MR. JENSEN: Do you want to talk about
10 that, Peter, for a minute? This is Peter Sinton,
11 who was the one that constructed the groundwater
12 model. We're kind of getting ahead of ourselves a
13 little bit, so -- but that's all right.

14 MR. SINTON: Several of the wells for the
15 deep perched system, the bigger system, the
16 boundary of the system is defined fairly well
17 around this perimeter because several of these
18 wells are actually dry.

19 Now, on the northwestern side, there is
20 some question --

21 MR. HOVLAND: Northeastern.

22 MR. SINTON: Northeastern, yeah. All on
23 this boundary, there's some question about exactly
24 where this -- this boundary is, but it's fairly
25 close to this area right in here.

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1 UNIDENTIFIED PERSON: Excuse me. I had
2 understood that the State oversight committee had
3 felt that on some of those wells that you had run
4 them too deeply and, therefore, had missed the
5 Perched Water System and that, in fact, that plume
6 might be larger.

7 MR. HOVLAND: Well, actually, it was the
8 Division of Environmental Quality. It was our
9 group that noted that and made the comment.
10 Basically, as we went through our comment
11 resolution period in the modeling that Peter is
12 going to present, that that edge as -- we might
13 have to go back to that diagram showing the Perched
14 Water System.

15 That edge, as it tapers out, is not
16 completely defined; but it's close. And I think
17 when we looked at it and went through the different
18 comment resolutions and talked to the people who
19 put the wells in, the U.S. Geological Survey and
20 the type of modeling that Peter is going to be
21 talking about or Nolan, you'll see that the
22 modeling that they do takes the effect of the major
23 portion of the perched water zone. And the little
24 tapering edge doesn't really add that much to it.

25 So, what they're doing is looking at the

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1 maximum risk from that, the effect of that on the
2 Snake River Plain Aquifer when they model. But I
3 think it's going to be important to see the
4 modeling that they did and then maybe revisit this.

5 MS. GREEN: If I could just interject a
6 little here. We do have a question and answer
7 period after the presentation. And if -- but I
8 don't want to discourage you from raising questions
9 that are key to your understanding along the way.
10 So, if you have things that really need explained
11 right now to understand, go right ahead.

12 UNIDENTIFIED PERSON: Yeah. On my left
13 of that slide, what are the depths of those wells?
14 Like the ones that are outside the plume?

15 MR. SINTON: Over here?

16 UNIDENTIFIED PERSON: Yeah. Keep going
17 to the left outside of the plume.

18 MR. JENSEN: Over here?

19 UNIDENTIFIED PERSON: Yeah. What are the
20 depths of those wells?

21 MR. SINTON: These wells go -- I believe
22 they go down to the lower interbed, which is what
23 this perched water body is on top of. I don't know
24 the exact depths, but they go down to that
25 interbed.

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1 UNIDENTIFIED PERSON: And can you explain
2 to me, just in lay language, how you read that
3 well?

4 MR. SINTON: How you read it?

5 UNIDENTIFIED PERSON: Yes. In other
6 words, if I understand it, there's a hole in the
7 ground that goes down into the rock.

8 MR. SINTON: That's correct, yes.

9 UNIDENTIFIED PERSON: How do you
10 determine at what level that perched water pool is
11 located? How do you read the well?

12 MR. SINTON: Okay. Can you put the
13 other bell-shaped curve on there?

14 What is done is a well is drilled. It's
15 a hole in the ground. It's drilled down and, for
16 most of those wells, they're drilled into these --
17 into this sediment right in here and completed with
18 a casing and a well screen, which is open to the
19 basalt rock in here.

20 And then after the well is completed,
21 water will flow into it. And water will rise to
22 the level that this perched water table is at.
23 That's how we know where it is. So, where it's
24 dry, the wells are completed out here on the
25 periphery or the edge; and there's no water in

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1 them. That's how we know where the edge of this
2 is.

3 MR. BROSCIOUS: What is your completion
4 depth? What is the interval completion distance?

5 MR. SINTON: Most of the older wells are
6 completed -- some of them are actually open. Other
7 ones are completed such that they're across this
8 entire interval. The newer ones, some are
9 completed right at the top. Some are completed
10 right at the bottom so that we can get an idea of
11 vertical head distribution or hydraulic gradient.

12 UNIDENTIFIED PERSON: Excuse me. That
13 was a great question, but I didn't understand what
14 it meant. So, could you tell me what that gradient
15 meant or where it's screened? You just explained
16 where it was screened, but I don't know what that
17 means.

18 MR. SINTON: Okay.

19 MS. GREEN: Do we have any -- any figures
20 in the RI that show an example, a cross section of
21 a well?

22 MR. SINTON: Yeah, we do.

23 MR. HOVLAND: I think that would be
24 pretty helpful to see what that looks like.

25 MR. SINTON: Could we maybe draw it on

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1 there? Okay. What Nolan has just drawn is a well.
2 And the wells are drilled down into these
3 sediments. And then what we do is we install a
4 casing which goes on in the inside of the hole.
5 The casing is cemented into place so it doesn't
6 leak. And then the casing has -- it either has
7 holes in it, or it has what we call a screen, which
8 is almost like a screen on a -- you know, like your
9 porch screen door, kind of like that. It's much
10 more sturdy than that, but that's what it's like.

11 And that would be what we call the
12 completion interval. And that would be where water
13 would come into this well and rise up to this
14 level. Or if you took a water sample, you took a
15 sample, you took some of the water out of the well,
16 that's where water would enter the well and come
17 up; and we would take it out.

18 Does that answer your question?

19 UNIDENTIFIED PERSON: Thank you.

20 MR. JENSEN: And casing is just pipe in
21 the ground. It's just a pipe in the ground.

22 MR. SINTON: Okay.

23 MR. JENSEN: All right. What I wanted to
24 show you just before we talk about the risk
25 assessment is when they drill some of these wells,

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1 they core them. And if you wonder what the basalt
2 looks like down there, this is it. This is
3 basically what the aquifer looks like and
4 everything above the aquifer, just layers of basalt
5 like this.

6 And then in between this, there will be
7 layers of, like, sand or gravel as interbeds. And,
8 as you can see, this has kind of got some holes in
9 it. Those are where when the lava flows went out,
10 there were gasses in them that caused these
11 bubbles. But as you'll notice or if you've looked
12 at them, you'd see that these holes aren't
13 interconnected very well.

14 So, the water doesn't flow
15 through the holes. This is pretty much just solid
16 rock. But if you looked at it on a bigger scale,
17 you know that there was fractures and cracks in the
18 rock.

19 And so, when we talk about an aquifer or
20 the perched water being down there, it's not like
21 there's a big cave full of water. It's just that
22 water is sitting in all the little cracks. But, at
23 a certain level, those cracks are full of water;
24 and above them, they're not. So, that's kind of
25 the top edge of that Perched Water System.

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1 Does that make sense?

2 MR. BROSCIOUS: The alluvium or the
3 interbeds are not necessarily sand and gravel, are
4 they?

5 MR. SINTON: Not all of them are.

6 MR. BROSCIOUS: Not if you've got perched
7 water tables on them.

8 MR. SINTON: No. They're finer grained
9 than sand and gravel. Some of them have clays or
10 cinders in them. They're usually pretty fine
11 grained.

12 MR. JENSEN: Kind of red clay looking
13 things, really.

14 MR. SINTON: That's right.

15 MR. JENSEN: From the cores I've seen.

16 Okay. All right. So, that's what the
17 perched water is in.

18 Now, the next slide, basically, what
19 we've done so far is explain how we go about
20 finding out what's out there. The next important
21 part is, okay, we know it's there; is that a
22 problem or not?

23 And what is done there is, we go through
24 what's called a risk assessment. And what I'm
25 going to do now is hand over the mike to Joe Gordon

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1 from Dames & Moore who did the work on the risk
2 assessment for this project. And take it away.

3 MR. GORDON: Thank you, Nolan.

4 Well, this flow chart is a graphic
5 representation of the risk assessment process. The
6 first step is to evaluate the data that we've got
7 out at the site when we went out and did a site
8 investigation. And that data is applied in
9 essentially two parallel pathways: the toxicity
10 assessment and the exposure assessment.

11 The toxicity assessment, we evaluate
12 those contaminants which -- from both a
13 carcinogenic and a noncarcinogenic standpoint. And
14 then over in the exposure assessment, we look at
15 the pathways to humans and nonhuman receptors as
16 well as uptake of contaminants through all those
17 pathways.

18 Then those two parallel paths are brought
19 back together in the risk characterization when we
20 look at the impact of exposure and apply the dose
21 response to those uptakes.

22 So, the first step was to come up with
23 the contaminants that we are concerned with. And
24 the way that we did that is we screened
25 contaminants at the site and evaluated them to

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1 identify the ones that were going to contribute
2 greater than one percent of the risk at the site.

3 And these are the ones that came out of
4 that screening. The ones that are shaded here, are
5 the ones that turned out to dominate the risk in
6 the risk assessment.

7 Okay. To evaluate the risk at the site,
8 we constructed an exposure scenario where we had a
9 hypothetical resident farmer who constructs a well
10 out at the site right into Snake River Plain
11 Aquifer directly below the Perched Water System.
12 And he takes all of his water for domestic purposes
13 from that well, irrigates his crops, consumes crops
14 grown at the site, feeds his livestock with those
15 crops and that groundwater and consumes that
16 livestock.

17 Okay. We also evaluated nonhuman
18 receptors. We looked at vegetation by looking at
19 uptake of groundwater. We looked at herbivores by
20 looking at their uptake of groundwater as well as
21 ingestion of vegetation that's irrigated with
22 groundwater and direct soil contact that may have
23 been contaminated by that groundwater that's pumped
24 from the aquifer as well as carnivores who are
25 exposed to the same pathways with the addition of

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1 other animals out at the site.

2 Okay. In order to do this, we
3 constructed a groundwater model whose purpose it
4 was to predict concentrations of contaminants in
5 the aquifer over time.

6 Now, do we have a -- all right. Here,
7 let's put this one up. Let's go to this one here.
8 In order to do that, we looked at someone
9 constructing a well and completing it in the Snake
10 River Plain Aquifer directly below the site. And
11 we looked at the screen intervals, that we talked
12 about before, which was only twelve feet.

13 So, we looked at -- okay. We looked at
14 contaminants flowing down from the deep perched
15 zone to the Snake River Plain Aquifer and pumping
16 just the top twelve feet of water from the Snake
17 River Plain Aquifer so we didn't look at dilution
18 from the rest of the aquifer.

19 If someone was to go out and install a
20 well for domestic purposes, the screened interval
21 would probably be something on the order of 50 to
22 100 feet. So, this tends to overestimate risks at
23 the site.

24 MS. MINEUR: Excuse me. Could you repeat
25 that where you say --

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1 THE REPORTER: I can't hear her.
2 MS. GREEN: Speak up, please, Lynn.
3 MS. MINEUR: I'm just trying to -- on
4 that diagram, are you telling me that a person is
5 going to drill a 500-foot well?
6 MR. GORDON: Right. Okay. This is
7 someone that goes out to the site to live, this
8 would be 125 years in the future. The Perched
9 Water System would not be there anymore. So, you
10 would -- you would drill right through this and
11 these contaminants -- well, the water won't be
12 there anymore. And we assume that contaminants are
13 still up in the surface water pond there.
14 Okay. That warm waste pond, we assume
15 it's still there; and obviously, the Test Reactor
16 Area won't be there anymore. We assume that the
17 Test Reactor Area will operate for another 25 years
18 followed by a 100-year institutional control
19 period. Okay. So, this is -- this is a well that
20 is completed down to the Snake River Plain Aquifer;
21 but obviously, this water is gone up here.
22 MS. GREEN: Joe?
23 MR. GORDON: Yes.
24 MS. GREEN: If you could clarify, too,
25 that the perched water is gone long before the

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1 125-year period.

2 MS. MINEUR: I understand that. Where
3 I'm confused is, I thought you said earlier that
4 the Snake River Plain Aquifer is not a caveful or
5 an underground lake of water; is that correct?

6 MR. GORDON: That's right.

7 MS. MINEUR: So, why are we drilling at
8 500 feet? Number one, what happens at 500 feet
9 that's different than --

10 MR. GORDON: This is all dry. This is
11 all going to be dry. You won't encounter water
12 until you get down to 480 feet.

13 And, also, just a point of clarification,
14 this well, doesn't matter when it happens, if
15 somebody wants to get groundwater, they have to
16 drill to 500 feet or they don't get it. Whether it
17 happens today or tomorrow or whenever, as long as
18 that perched water is gone.

19 MR. BROSCIOUS: But in 20 years, they
20 could drill into the deep perch and probably still
21 find water.

22 MR. GORDON: If the reactor runs for --

23 MR. BROSCIOUS: I know. But in
24 20 years --

25 MR. GORDON: There will still be some

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1 perched water there, yes. One thing I didn't
2 mention earlier was that the only reason that
3 perched water is there is because those ponds are
4 there. That's a man-made feature. That didn't
5 used to be there.

6 So, when the reactor shuts down, they go
7 away.

8 UNIDENTIFIED PERSON: Do you want to
9 clarify that for me because the one reactor that's
10 contributing the most to the cold water waste pond
11 is going to go until 2007 and will not be
12 completely decommissioned for 27 years.

13 MR. GORDON: Right.

14 UNIDENTIFIED PERSON: So, in 20 years it
15 will still be there?

16 MR. GORDON: Right, and the model did
17 assume that.

18 MR. BROSCIOUS: Did your model take into
19 consideration in the process of drilling down to
20 the aquifer, as in all drilling processes, there's
21 a lot of mixing of all the drilling findings in the
22 process of going down, the mixture that --
23 contaminants that would still be in the sediment
24 beds even though there may not be water in it in
25 125 years?

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1 MR. GORDON: Well, no. The health and
2 safety aspects of actually putting a well in at the
3 site were not considered. Is that your question?

4 MR. BROSCIOUS: They weren't?

5 MR. GORDON: No. I mean, it's a
6 hypothetical well that we looked at. Basically,
7 what we were trying to do --

8 MR. BROSCIOUS: Okay. But even
9 hypothetically, you have to drill down through
10 those contaminated sediments which will still have
11 residuals in them for infinity. And in the process
12 of drilling down through that, that the well
13 casing, even the bits and everything, are going to
14 become contaminated with whatever residuals are
15 still there.

16 Did you include that in the model?

17 MR. HOVLAND: Joe, what he might be
18 getting at, I think, is there are common practices
19 where you can use telescope casing or you wouldn't
20 have to be concerned, as he's talking about, just
21 drilling a hole straight down there.

22 So, there's -- there's things that are
23 inherent in good drilling practices.

24 MR. GORDON: Yeah. I think what you're
25 getting at is not a key feature of potential risk

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1 at the site. I mean, if you're asking if we would
2 have drilled right through the surface warm waste
3 pond, we did not consider that.

4 MR. BROSCIOUS: Well, the contaminated
5 sediments is going to be the whole width of the
6 plume, the whole size of the plume. And they're
7 going to still be there. And the -- you know, to
8 assume that -- that -- you're assuming that there's
9 going to be some high tech drilling operation that
10 goes out there that knows that there's radioactive
11 contamination in those sediments and those
12 interbeds. And, you know, they're going to seal as
13 they go down and try to do it the same way you deal
14 with your monitoring wells. But you can't even
15 drill monitoring wells down there without getting
16 contamination in the process of going down. It
17 screws up your sampling, even with current
18 technology.

19 MS. GREEN: So, if I understand you
20 correctly, you're wondering if we factored in to
21 the risk assessment for that resident, the risk of
22 doing the actual drilling.

23 MR. BROSCIOUS: Right.

24 MS. GREEN: Like airborne inhalation or
25 whatever --

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1 MR. BROSCIOUS: There's going to be
2 residuals in the process that are going to get
3 mixed up, and the first ten years they're going to
4 pump out of there, they're going to be pumping --

5 UNIDENTIFIED PERSON: They're just going
6 to inoculate, you know, with the drill. It's just
7 going to inoculate that area of the aquifer with
8 the contaminants from above. So, you have to take
9 that into consideration, correct? The sediments
10 fall into the hole.

11 MR. GORDON: Well, I think you have to
12 take -- sit back and take a look at what we're
13 talking about here. We're talking about a billion
14 gallons of water that's spread over a one mile by a
15 half mile area. And a cross sectional area of
16 those contaminants in the sediments at that level
17 right there is not going to be a key player in
18 the --

19 MR. BROSCIOUS: Do you have data to
20 support that? Have you tested the sediments?

21 MR. GORDON: We didn't do that
22 calculation. I'm sure that it would show
23 that it's not a key player in the risk assessment.

24 MR. HOVLAND: But, no, we didn't do that.

25 MR. GORDON: But, no, we didn't.

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1 UNIDENTIFIED PERSON: Well, you said they
2 were going to put it in right next to this pond.
3 At the technical briefing, when I discussed it with
4 the people, they said they were just going to leave
5 -- when that top shallow perch zone went, it would
6 go in two or three months, and that's where they're
7 going to be. So, you've got lots of things in the
8 shallow perch zone that are just going to be
9 sitting there, some of them with long half-lives,
10 that are going to be contaminants of concern. And
11 it will be affected in that. I don't know how you
12 can say it isn't part of it.

13 MR. GORDON: Well, we'll have to think
14 about it. But that's not something we did.

15 MS. GREEN: It was not done in the risk
16 assessment, and it's not a practice, I don't
17 believe, that -- it's not a calculation that's
18 called out in the guidelines for doing risk
19 assessment, I don't believe.

20 MR. GORDON: Well, here's the key issue.
21 The purpose of the risk assessment was to evaluate
22 whether we should clean up the water, okay? And
23 this operable unit is the water. Sometimes the --
24 the contaminants that are in this top 50 feet
25 there, are part of a different operable unit.

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1 far as those sediments down there, the only way
2 that those would be evaluated, that I can think of
3 right now, is in the final assessment.

4 MS. MINEUR: So, they're not going to
5 be evaluated until the --

6 THE REPORTER: I can't hear that.

7 MS. GREEN: Lynn, can you --

8 MS. MINEUR: -- operable unit ten.

9 MR. GORDON: Operable unit ten is up
10 here.

11 MS. MINEUR: Right. I'm aware of that.

12 MR. GORDON: Then, operable unit, I guess
13 it would be --

14 MS. MINEUR: Thirteen?

15 MR. GORDON: Two dash thirteen will be
16 all of the rest.

17 MS. MINEUR: I guess I need to repeat
18 that again. The sediments I'm trying to --

19 THE REPORTER: I cannot hear her.

20 MR. GORDON: Do you want to use this?

21 MS. MINEUR: Are you saying that the
22 sediments themselves under each of the ponds will
23 be considered an operable unit with that pond? My
24 question is where will the sediments, after the
25 deep perched water has moved, evaporated, done its

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1 thing, where are they going to be considered?

2 MR. GORDON: Okay. Someone can correct
3 me if I'm wrong; but I'm pretty sure that that will
4 be considered in operable unit two dash thirteen
5 which is the WAG-wide RI/FS.

6 MR. JENSEN: That's the only place they
7 would be in. We've just got to remember to do it.

8 MS. MINEUR: We will remind you.

9 MS. GREEN: Those are the subsurface
10 sediments, not the surface sediments, right?
11 That's what you're talking about.

12 MR. GORDON: Right. And what we would
13 look at when we did that is what are the reasonable
14 ways people will be exposed to contaminants out
15 there?

16 MR. JENSEN: And what Joe is trying to
17 say is with sediments in the depth like that, it's
18 going to be pretty tough to get them to people.

19 MS. MINEUR: All they have to do is drill
20 a well.

21 MR. JENSEN: Right.

22 MS. MINEUR: But could you repeat that
23 citation for me?

24 MR. GORDON: This one -- this perched
25 water is operable unit two dash twelve.

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1 Operable unit two dash thirteen will be all of TRA,
2 all of the things that were not considered in
3 any of the other specific operable units, one
4 through twelve.

5 Do you remember this one here? Right
6 here, the investigation of the whole test reactor
7 area, okay? So, that will evaluate not just those
8 sediments, but anything else that was -- any
9 residuals that may have been left there from
10 operable units two through twelve. Or anything
11 else that didn't fall into one of those operable
12 units will be evaluated on a WAG-wide basis.

13 And then, again, the entire site will be
14 evaluated for -- in a sitewide Snake River Plain
15 Aquifer Study.

16 MR. BROSCIOUS: Is that in 1999?

17 MR. GORDON: '98.

18 MR. JENSEN: '98 is the start of that.

19 MR. BROSCIOUS: It's not going to be
20 pulled together until '99?

21 MR. GORDON: I don't know. Probably '99
22 or even 2000.

23 MS. GREEN: The final record of decision
24 would be 2001, I think.

25 UNIDENTIFIED PERSON: When is two

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1 thirteen scheduled?

2 MR. GORDON: I think it starts in '96, if
3 I remember right, '95 or '96.

4 Okay. Well, the results of the risk
5 assessment are that in 125 years the risk to a
6 person who completes that well out at the site
7 consumes all his water and all of his vegetables
8 and livestock from the site, the risk to that
9 individual is one in 179 million.

10 Now, as part of EPA's review of the risk
11 assessment, they went through to figure out at what
12 time, hypothetically, could someone go out there
13 and drink that water under that same scenario, and
14 we came up with ten years, actually, in the year
15 2000, and still be within the acceptable range of
16 risk.

17 UNIDENTIFIED PERSON: Okay. In your
18 documentation in here, because that was one of the
19 things I looked at, when they went in 30-year
20 increments for, I believe it was chromium and
21 tritium, it falls within the acceptable limits
22 thirty years after 1995. So, that's not ten years.

23 MR. GORDON: Actually, it's for someone
24 who starts living there in 1995. I was
25 conservative here and said someone who starts

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1 living there in the year 2,000 and lives there for
2 a 30-year period.

3 UNIDENTIFIED PERSON: Okay. What it says
4 here, The carcinogenic risk from tritium exceeds
5 the acceptable risk range for the 30-year periods
6 beginning 1990 and 1995. So, you're saying that it
7 moves there -- it will be 40 years before --

8 MR. GORDON: It will be the year 2000.
9 If you moved there in the year 2000, the 30-year
10 period starting in the year 2000 is within the
11 acceptable range.

12 UNIDENTIFIED PERSON: Okay.

13 MR. GORDON: So, the one that started in
14 1990 or 1995 was above. It exceeded the acceptable
15 range; but the one that started the year 2000, is
16 at the acceptable range.

17 UNIDENTIFIED PERSON: Okay. This is a
18 person planting his vegetables there and drawing
19 his water there?

20 MR. GORDON: Right. That starts in 2000
21 and lives there until 2030.

22 UNIDENTIFIED PERSON: Which one of you
23 guys is going to volunteer for this?

24 MR. GORDON: I will.

25 UNIDENTIFIED PERSON: One of the

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1 questions I have in the risk assessment is, if that
2 person can live there until 2030, are we saying the
3 incidence of cancer will not occur during that time
4 period?

5 MR. GORDON: No. The incidence of cancer
6 over that person's entire lifetime. 70-year
7 lifetime is what's considered. The 30 years is how
8 long the person lives there, which is the 90th
9 percentile of how long someone actually lives in
10 the same place.

11 UNIDENTIFIED PERSON: Okay.

12 MR. JENSEN: So, what he's saying is, the
13 EPA is establishing some standards for evaluating
14 risk. And one of those is that a standard
15 calculation or a standard assumption in the
16 calculation is that you assume someone will live
17 there for 30 years. And that's why they were the
18 30-year increments.

19 MR. GORDON: Okay. Similarly, the
20 noncarcinogenic health effects, the risk from
21 noncarcinogenic contaminants, was also found to be
22 acceptable for the 125-year scenario as well as for
23 the 10-year scenario.

24 So, in summary, there are currently
25 no unacceptable risks to members of the public

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1 since the site is restricted and perched water is
2 below grade. And for the future on-site resident,
3 the risk will fall within the acceptable range
4 within ten years.

5 And with that, I guess I'll turn it back
6 over to Nolan.

7 MR. JENSEN: All right. So, as you
8 probably already know if you've seen the proposed
9 plan, what is recommended for this site is that
10 there will be no remedial action taken. However,
11 because we did this based on predictions of what
12 the concentrations will be, we're also recognizing
13 that we need to monitor to make sure that those
14 predictions are correct and that all of the
15 assumptions that we based these calculations on are
16 correct.

17 So, we do plan to monitor. And also the
18 National Contingency Plan establishes that periodic
19 reviews be done; in fact, that they be done no less
20 often than every five years. So, these reviews
21 would also be done by the agencies at least every
22 five years and, perhaps, more often, if necessary,
23 to make sure that what we have recommended, if we
24 do take that route after public comment -- where
25 shall I stand? -- that it's all right; that the

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1 assumptions are still accurate.

2 Okay. Now, just -- this isn't working is
3 it? Okay. So, we just put this slide together to
4 explain, after a couple of the other meetings when
5 questions were asked, what -- you know, what are
6 you talking about when you talk about monitoring?
7 What does that mean?

8 And, basically, what it would mean is, we
9 would need to go out and keep testing wells,
10 especially for certain contaminants that we knew
11 were risk drivers. And I just put tritium and
12 Chromium up there because those are ones that we
13 know are key contaminants. And we would need to
14 monitor probably several wells in the aquifer, that
15 are screened down in the aquifer, as well as some
16 up in the Perched Water System.

17 We would have to make a decision on how
18 often the samples would be collected and water
19 levels measured and then, also, decision points for
20 what happens if our assumptions are wrong.
21 Obviously, we'll need to go back and revisit the
22 decision. Or perhaps another decision is at what
23 point do we change monitoring frequencies and
24 things like that.

25 So, that's what we're talking about when

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1 we say we're going to monitor.

2 MR. BROSCIOUS: Is the State going to
3 do split sampling?

4 MR. HOVLAND: The Division of
5 Environmental Quality is not doing split sampling.
6 The oversight program is involved in a lot of
7 different sampling throughout, and there are people
8 assigned to the Test Reactor Area. And that is an
9 option.

10 MR. BROSCIOUS: But you're not doing it
11 now? I'm saying the oversight program isn't doing
12 it now?

13 MR. HOVLAND: Split sampling?

14 MR. BROSCIOUS: Yeah.

15 MR. HOVLAND: Specifically, they're not
16 doing any split sampling -- are you saying related
17 to this monitoring plan or just any split sampling?

18 MR. BROSCIOUS: Any split sampling at
19 the test reactor.

20 MR. HOVLAND: Specifically, right now
21 they're not; but they do have plans where they're
22 incorporating a lot of different types of sampling.
23 But the person to contact on that would be Mr.
24 Flint Hall in Idaho Falls. And his phone number is
25 525-7300. And he's the person assigned to that

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1 group for the oversight group.

2 MR. BROSCIOUS: So, there is -- at this
3 time, there's no independent sampling of the test
4 reactor area?

5 MR. HOVLAND: Well, again, he has various
6 plans in effect. And you'd have to check to see
7 where he is on those.

8 MR. BROSCIOUS: Actual sampling plans?

9 MR. HOVLAND: Yeah. He's putting those
10 together for the next couple of fiscal years.

11 MR. JENSEN: USGS does do sampling
12 too, independent sampling at TRA. And I don't know
13 how often, but -- and I don't know -- they do
14 different wells at different frequencies, but they
15 do independent sampling as well.

16 MR. HOVLAND: Now, there is sampling at
17 the production wells for drinking water.

18 MR. JENSEN: Right. Right. EG & G
19 does that for the drinking water.

20 MS. GREEN: Well, we've had lots of
21 questions during the presentation. Since Nolan has
22 completed his presentation, that brings us to the
23 general question and answer session on perched
24 water.

25 Does anybody have any other questions?

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1 Yes, sir.

2 UNIDENTIFIED PERSON: It seems odd that
3 you fragment the waste on top of the surface with
4 the wastes that will eventually percolate into the
5 aquifer. In other words, you're not saying that
6 there are dangerous wastes tied up in the rock and
7 sediment all the way down to the aquifer. What
8 you're saying is that by the ground acting as a
9 filter for these dangerous contaminants, that the
10 water below this level will be okay to drink; is
11 that correct?

12 MR. GORDON: Well, that is correct, yeah.

13 UNIDENTIFIED PERSON: So, in other words,
14 if the contaminants are still there at a high
15 level, but just tied up in the land, so, as far as
16 we know, if there's no major disruption of the
17 land, then they're tied up nicely and being stored
18 for us?

19 MR. GORDON: Right. And they're
20 detained.

21 UNIDENTIFIED PERSON: And how long would
22 the decay process take before they'd be safe for
23 somebody to bring a core up?

24 MR. GORDON: I didn't do that
25 calculation, but several of the key contaminants

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1 have very short half-lives. In the near term, you
2 know, over the next few years and probably until
3 somewhere around the year 2050, somewhere in that
4 range, the risk actually is driven by tritium,
5 which has a 12-and-a-half-year half-life. Then
6 that drops off, and the risk turns out to be driven
7 later by cobalt-60, which has a five-year
8 half-life.

9 So, the risk is dropping off very
10 quickly.

11 UNIDENTIFIED PERSON: Yeah, but that's
12 sort of what we know to be the risk today from
13 exposure. In other words, exposure levels are not
14 cast in concrete either. You know, we found that
15 sometimes when risks were thought to be only for
16 eight to ten years, to show evidence of -- of
17 exposure, actually, after 30 to 40 years, there's
18 significant numbers of people showing effects.

19 So, in other words, those have to be
20 recalculated at times. Those are sort of unknown.
21 So, I wonder about the wisdom of letting the model
22 really let us feel peaceful about, you know, about
23 some of the residents owning that property.

24 MR. GORDON: Well, I agree with some of
25 what you're saying; but I think that the

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1 carcinogenic risk from radionuclides is something
2 that we really do know quite a bit about. EPA
3 regards them as "A" carcinogens with no
4 threshold. I think that actually, radionuclides
5 are some of the carcinogens that we know the most
6 about.

7 MR. JENSEN: Also, another point, like
8 Joe said, when we come up -- let me start over.
9 The model -- all the model did was predict
10 concentrations. That's the only purpose.

11 UNIDENTIFIED PERSON: At the end.

12 MR. JENSEN: Right. And then, as far as
13 how toxic those contaminants are, those come out of
14 EPA's literature. So, the model didn't do any
15 calculations on that. Those were out of EPA
16 standards.

17 UNIDENTIFIED PERSON: So, the exposure is
18 after the land has acted as a filter to collect the
19 contaminants?

20 MR. JENSEN: Right.

21 MS. GREEN: Chuck?

22 MR. BROSCIOUS: Well, with the continued
23 use of the -- at least the Advanced Test Reactor
24 and the cold waste ponds and what other -- what
25 other unlined disposal sites that you have to the

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1 tune of something like 33 million gallons a year,
2 that's going to continue to drive contaminants down
3 through the -- through the interbeds just by virtue
4 of the fact that the water, in its movement, is
5 going to carry some of those contaminants with it.

6 MR. GORDON: Well --

7 MR. JENSEN: I was just going to say,
8 right now, the pond that is putting the most water
9 into the system is the cold waste pond. And --

10 MR. BROSCIOUS: Well, they're right side
11 by side. They're both contributing to the perched
12 water regardless. And you're adding water to that.
13 And, you know, by virtue of the fact that that
14 water is migrating down toward the aquifer, it's
15 going to continue to take material and contaminants
16 with it.

17 MR. JENSEN: I guess I would defer to
18 Peter, but I think the key mechanism that's driving
19 the risk here actually is water going through the
20 warm waste pond. And when you're discharging water
21 to the cold waste pond, that -- that inventory is
22 not coming into contact with the warm waste pond or
23 the shallow perched zone below the warm waste pond.

24 I don't know if Peter -- do you have
25 anything you want to add to that?

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1 MR. SINTON: That's basically what's
2 going on.

3 MR. JENSEN: Okay. Let me read this one
4 that came in on a note card. It's similar to what
5 we talked about earlier.

6 And the question is, Under what operable
7 unit or units are the sediments in the shallow
8 perched water being evaluated for each of the four
9 waste ponds and the retention basin and the Test
10 Reactor -- at the Test Reactor Area, and when are
11 they scheduled?

12 Oh, good, you gave me this. All right.
13 This is the interagency agreement.

14 Let's see, the warm waste pond, as you
15 know, we evaluated that last year and determined
16 that that did need to be cleaned up. So, that
17 one's already been evaluated. The cold waste
18 pond --

19 UNIDENTIFIED PERSON: Excuse me, in the
20 warm waste pond, my understanding was that it was
21 an interim action.

22 MR. JENSEN: Right.

23 UNIDENTIFIED PERSON: And you told us, at
24 that time, that no plans had been made to deal with
25 those sediments.

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1 MR. HOVLAND: Excuse me, what was the
2 last part of the statement there?

3 UNIDENTIFIED PERSON: My understanding is
4 that interim action is that the sediment under the
5 liner, if the liner had not been breached, would
6 not be looked at.

7 MS. GREEN: There's some confusion here.
8 The warm waste pond doesn't have the liner. This
9 is the project we brought out about a year ago
10 today for public community.

11 MR. JENSEN: And what you may be talking
12 about --

13 UNIDENTIFIED PERSON: Well, there's --

14 MR. JENSEN: Okay. Let me -- there are
15 two -- there are two warm waste ponds, actually.
16 One of them isn't built yet. One of them is just
17 being constructed, and it will be constructed with
18 a liner and with leak detection and all that stuff.

19 The new warm waste pond will be
20 constructed this year to replace the old one. The
21 old one is the one that we've already determined
22 poses an unacceptable risk and needs to be cleaned
23 up.

24 UNIDENTIFIED PERSON: Just which operable
25 unit is it?

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1 MR. JENSEN: That's two dash ten.
2 Okay. Now, the cold waste plan is two
3 dash nine. And that is also -- two dash nine is
4 the cold waste pond and the sewage lagoon. And
5 that one is also undergoing evaluation right now, a
6 preliminary one, a preliminary evaluation.
7 They'll be relooked at again, also, in
8 the -- in the WAG-wide comprehensive plan. But
9 we're taking samples of those this summer.
10 UNIDENTIFIED PERSON: So, when -- when --
11 on two dash ten, when can we expect to hear
12 something about that?
13 MR. JENSEN: As far as public comment?
14 UNIDENTIFIED PERSON: Right.
15 MR. JENSEN: That was last year.
16 UNIDENTIFIED PERSON: And we won't ever
17 hear about it again?
18 MR. JENSEN: Well, what will have to
19 happen on that one, since it was an interim action,
20 again from the comprehensive WAG-wide RI/FS, that
21 will have to be looked at from that standpoint
22 again.
23 Go ahead, Dean. Talk to them.
24 UNIDENTIFIED PERSON: The reason I'm
25 asking this question is because we sit in these

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1 technical briefings, and it's very hard for us to
2 keep track of this. And I realize it takes time,
3 but if you could just keep telling us when we can
4 expect to see these pop up again, it helps us to
5 conceptualize how these pieces fit together.

6 MR. NYGARD: I was giving hand signals to
7 Dave, but I'll just go ahead and answer the
8 question myself. Just -- I think what you're
9 asking is what's the status on the warm waste pond
10 since the last time we were out for public comment
11 on this.

12 The record of decision was signed on that
13 by the three agencies, and the warm waste pond
14 sediments will be remediated in accordance with
15 that record of decision that was signed back in
16 December.

17 The status right now is that we are in
18 remedial design, and there are -- it's in a --
19 actually developing pilot -- doing some pilot test
20 studies to determine how to extract the
21 contaminants from that sediment to achieve the
22 clean-up levels.

23 So, we're still -- we're still working on
24 that project. If you'd like some more information
25 on that, we can certainly give some more detail.

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1 UNIDENTIFIED PERSON: Does that -- I'm
2 just trying to get back to this. Does that include
3 the sediments in the shallow perched water table?

4 MR. JENSEN: That did not.

5 UNIDENTIFIED PERSON: Where will that be
6 dealt with?

7 MR. JENSEN: The only place for that,
8 that I can think of, is in the comprehensive one.
9 Because that interim action focused on the upper
10 two feet of sediments.

11 UNIDENTIFIED PERSON: So, for the -- to
12 make sure I understand this, for the warm waste
13 pond, it was not handled in two dash ten, is that
14 the sediments in the shallow perched pond -- that's
15 all I'm asking about -- will be handled in two
16 thirteen?

17 MS. GREEN: Can we -- Reuel, can you put
18 up that layer cake slide so we can specifically
19 make sure we've answered your question.

20 MR. HOVLAND: Actually, Lynn, I wonder if
21 you're -- is the question the sediments in this
22 interim action for the warm waste pond and the deep
23 perched sediments --

24 UNIDENTIFIED PERSON: No. No.

25 MR. HOVLAND: -- will all be -- it's not

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1 where those will be handled or reevaluated?

2 Because basically, those are --

3 UNIDENTIFIED PERSON: I got the answer on
4 the deep perched pond. My question now -- Mary's
5 right. It was very confusing at the technical
6 briefing. There are four waste ponds and one
7 retention basin. They each have a shallow perched
8 water zone, correct?

9 MR. JENSEN: Or have had.

10 UNIDENTIFIED PERSON: Okay. I am
11 concerned about the sediments in those shallow
12 perched water zones, or what used to be, and under
13 which operable units for each of those five areas
14 will those be considered?

15 MR. JENSEN: You're talking from here
16 down?

17 UNIDENTIFIED PERSON: No. I don't want
18 to talk from there down. Right there.

19 MR. JENSEN: Right there?

20 UNIDENTIFIED PERSON: Right there.

21 MR. JENSEN: Right.

22 UNIDENTIFIED PERSON: For each of those,
23 which operable unit are they being considered
24 under?

25 MR. JENSEN: It would have to be

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1 thirteen, the comprehensive. Does that make sense?

2 UNIDENTIFIED PERSON: That just conflicts
3 with the information we got last week. And that's
4 why I'm concerned. Because last week was -- we
5 thought we were told that the shallow perched zone
6 would be dealt with the pond above it under those
7 operable units.

8 I'm just saying that -- you know, I'm
9 trying to get clarification. And that's why we're
10 taking so much time, is we're trying to figure out
11 where these are going to be dealt with.

12 MR. NYGARD: Okay. I think I remember
13 some of that discussion. And there was a lot of
14 confusion when people were talking about the
15 shallow perched, what was being said. Were we
16 talking about shallow perched sediments, or were we
17 talking about perched water?

18 And my recollection, from the way I heard
19 it, since I was in that room and --

20 UNIDENTIFIED PERSON: You should have
21 been in our room.

22 MR. NYGARD: Well, I was in Idaho Falls
23 for several meetings. But anyway, there was some
24 confusion there. And I think what we were talking
25 about -- we talked about the shallow perched --

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1 since we've been talking about this amongst
2 ourselves for so long, we immediately think water.
3 And that's what we were talking about.

4 As far as the shallow perched sediment
5 goes, that is in the issue for the comprehensive
6 RI, the remedial investigation. That is how it is.

7 UNIDENTIFIED PERSON: Okay.

8 MR. NYGARD: Does that clarify it?

9 UNIDENTIFIED PERSON: Right.

10 MR. NYGARD: Clear as a bell? Okay.

11 That's all there is to it.

12 MR. JENSEN: Does that answer this
13 question adequately?

14 UNIDENTIFIED PERSON: Well, as long as
15 the record shows what Dean just said and that
16 corresponds to what actually happened, that's an
17 adequate answer.

18 MR. NYGARD: I think the record does. It
19 does now.

20 MR. JENSEN: And you will remind us.

21 UNIDENTIFIED PERSON: Yeah, we will.

22 MS. GREEN: We will remind ourselves,
23 too, Nolan.

24 MR. JENSEN: Right.

25 MS. GREEN: Any other questions before --

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1 yes, Chuck?

2 MR. BROSCIOUS: Could you tell me what
3 the State budget request for both the oversight
4 program and DEQ's work at INEL is for fiscal year
5 '93?

6 MR. NYGARD: For '93? We're requesting
7 for DEQ -- let's see, one point eight.

8 MR. BROSCIOUS: Oversight?

9 MR. NYGARD: I don't know oversight.

10 MS. GREEN: Any other questions about
11 the --

12 MR. BROSCIOUS: Can you find out?

13 MR. NYGARD: I can.

14 MR. BROSCIOUS: How about EPA?

15 MR. NYGARD: I don't know.

16 MR. BROSCIOUS: Can you find out?

17 MR. NYGARD: Linda Meyer can address that
18 question for EPA with respect to their budget. I
19 don't know that myself.

20 MS. GREEN: Do we have any other
21 questions specifically about the perched water?

22 Yes, sir?

23 UNIDENTIFIED PERSON: I have a question.
24 Does the site occur on the flood plain of the Big
25 Lost River, and what was the assessment of the risk

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1 for flood from the Big Lost River?

2 MR. SINTON: It's not on the flood plain.

3 UNIDENTIFIED PERSON: It's not?

4 MR. SINTON: No.

5 MR. JENSEN: Not on the hundred year --

6 MR. SINTON: It's not the PMP, which is
7 the probable maximum.

8 UNIDENTIFIED PERSON: What are those
9 sediments if they're not flood sediments?

10 MR. SINTON: I'm not exactly sure what
11 the age of those sediments are. Now, they may
12 actually be sediments of the Big Lost River; but
13 today, it is not on the flood plain of the Big Lost
14 River.

15 And if I need to clarify that with a
16 geologist who can give us more information about
17 the history, the historical geology of the area
18 about where the Big Lost River was, I can do that
19 for you.

20 UNIDENTIFIED PERSON: Is it not also true
21 that at the time of the Challis earthquake, that
22 the ground --

23 THE REPORTER: I can't hear him.

24 MS. GREEN: The court reporter is having
25 difficulty understanding you. Could you come

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1 forward a bit, please.

2 UNIDENTIFIED PERSON: I say, in addition
3 and in response to this, is it not also true that
4 at the time of the Challis earthquake that the
5 ground in the basin above the INEL, the deep water
6 and the waters -- flood waters from that period,
7 which was only ten years ago, were lapping at the
8 doorstep of the RWMC?

9 MS. GREEN: I --

10 UNIDENTIFIED PERSON: It's hard to say
11 that's only a 100-year flood plain, if that's
12 what's going on.

13 MS. GREEN: I am not aware of any flood
14 on or near the INEL in the time frame of the
15 Challis earthquake.

16 Reuel, are you --

17 MR. SMITH: I don't know that either.

18 MS. GREEN: Well, he was stating they
19 were at the RWMC; and I certainly don't know of any
20 at --

21 UNIDENTIFIED PERSON: At the spreading
22 area just outside of the RWMC, there was evidence
23 that there was water there in the last ten years.

24 MS. GREEN: That is true. The water was
25 not from -- resulting from the earthquake as much

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1 as it was, to my understanding, just releases into
2 the river and wet years, basically.

3 MR. NYGARD: It was a rapid snow melt.

4 MR. PIGOTT: I did the bridge
5 inspections, the building inspections --

6 THE REPORTER: I didn't hear what he
7 said.

8 MS. GREEN: Here's the microphone.

9 MR. PIGOTT: I did the bridge
10 inspections and the building inspections the day
11 after the earthquake. The river, at that time, was
12 completely dry because I walked underneath the
13 bridge, and there wasn't any water in the river
14 coming into the INEL.

15 UNIDENTIFIED PERSON: Yeah, but what
16 happens for the next six months afterwards as the
17 ground -- I mean, there's a road sign up in the
18 Challis River Basin where they talk about that the
19 flow of the groundwater out of those springs and
20 the flow of the river increased -- I don't know if
21 it was ten-fold or something like that -- within
22 the six months after the earthquake.

23 MR. PIGOTT: That never got down to
24 the INEL.

25 UNIDENTIFIED PERSON: Well, the water or

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1 something that was in the spreading area then.

2 MR. PIGOTT: The water -- a lot of
3 that water gets diverted for irrigation. It never
4 even gets to INEL.

5 UNIDENTIFIED PERSON: Where does the
6 water come from then?

7 MS. GREEN: Bill -- yeah, I think we need
8 to -- if you could please speak a little bit
9 slower, sir, so that the court reporter could get
10 your question, she'd appreciate it, and we'd
11 appreciate it.

12 The water that entered the spreading
13 areas in the 1983 time frame -- I believe that's
14 what we're talking about, because that's when I
15 first moved there -- was there through the flow of
16 the Big Lost River and was diverted into the
17 spreading areas.

18 It was, to my knowledge, never classified
19 as any flood. So, I'm not sure --

20 UNIDENTIFIED PERSON: Well, my comment
21 is, then, the report here needs to show that --
22 what the situation of these ponds are in relation
23 to the flood plain of the Big Lost River, and what
24 the situation is in terms of additional surface
25 waters that may or may not encroach upon the INEL

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1 in a reasonable amount of time, which it does not
2 show in the report because I have just been reading
3 it.

4 MS. GREEN: Any other questions, specific
5 questions, about the TRA Perched Water System
6 before we begin the formal comment period?

7 (No response made.)

8 MS. GREEN: Okay. If there are no more
9 questions, this is the time when -- time that's
10 been provided for oral comments on the perched
11 water proposed plan.

12 How to make comments, if you have brought
13 prepared statements here tonight which you'd like
14 to have included in the meeting record and
15 responded to in the responsiveness summary, you may
16 either read them during the verbal comment segment
17 of the meeting or simply give the prepared
18 statement to Reuel Smith, if you have it written
19 down; and he will enter it into the record.

20 Do we have the tape recorder here
21 tonight, Reuel?

22 MR. SMITH: Yes

23 MS. GREEN: There's also a tape recorder
24 at the back of the room. If you would rather not
25 provide your oral comments in front of the

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.1 audience, you can use that, if you wish.

2 If you choose not to do so, not to
3 provide oral comments at this meeting, but you
4 still wish to provide comments in writing, the
5 address where to send those written comments is on
6 the back side of the agenda.

7 In addition, there are comment forms at
8 the back table specifically for the perched water
9 study. You're welcome to fill out a form tonight
10 and either leave it with Reuel or send it to us.

11 I'll remind you that written and verbal
12 comments are given equal consideration, and the
13 comment period for each of these -- for this
14 project and the other two, also, runs through
15 August 5th, 1992.

16 What happens to your comments after
17 you've made them? After the comment period has
18 ended, DOE prepares a summary of the oral and
19 written comments received on each of the proposed
20 plans. And then the three agencies, DOE, EPA and
21 the State, get together and evaluate those comments
22 for their -- for addressing the recommendation and
23 then respond to the comments that are relevant to
24 each topic in a document called the responsiveness
25 summary.

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1 That responsiveness summary is then made
2 available -- it's made part of the record of
3 decision for the project, and it's made available
4 to anyone who has signed the attendance register at
5 the back of the room and to anyone who provides
6 written comments along with a return address.

7 The -- we'd like to provide everybody who
8 wishes to make an oral comment with five minutes to
9 do so to ensure that everyone who would like to has
10 time to do so.

11 At the start of your comment, would you
12 please state your name and spell your name for the
13 court reporter for the record prior to giving your
14 comment?

15 Reuel, has anybody signed up to make oral
16 comments?

17 MR. SMITH: Four people have.

18 MS. GREEN: Four people have?

19 MR. SMITH: And possibly more. You might
20 indicate that it wasn't necessary -- it wasn't
21 necessary to sign up at the reception table.

22 MS. GREEN: Right. If you change your
23 mind and have not -- and would like to make oral
24 comments at the completion of the people who have
25 signed up, there will be an opportunity to do so.

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1 I'd like to ask the court reporter, are
 2 we at a place where -- we don't want to have to
 3 stop in the middle of somebody's comment to change
 4 the tape. How -- how are you as far as that status
 5 goes?

6 THE REPORTER: Can I check the tape?

7 MS. GREEN: Would you please?

8 THE REPORTER: I'll just change it now.

9 MS. GREEN: Okay. We're ready to start
 10 the formal oral comment session for the Perched
 11 Water at the Test Reactor Area. I guess I'd like
 12 to ask for a show of hands for those who plan to
 13 provide oral comments.

14 Anybody who would like to volunteer to go
 15 first?

16 MS. MINEUR: My name is Lynn Mineur,
 17 M-I-N-E-U-R. I have comments on the following
 18 proposed clean up plans at the INEL: the Perched
 19 Water System beneath the Test Reactor Area,
 20 submitted by the League of Women Voters of Moscow,
 21 June 23rd, 1992.

22 The League of Women Voters of Moscow is
 23 pleased to be able to present these comments in
 24 person at a public meeting in Northern Idaho. The
 25 League is reassured about our government's

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1 recognition of the public's right to the
2 opportunity to participate in the clean up process
3 regardless of whether the public chooses to
4 exercise that right in any given time.

5 The League continues to request language
6 in the INEL Community Relations Plan that will
7 guarantee that at least one public meeting on each
8 clean up project be held in the northern part of
9 the state.

10 On the Perched Water System beneath the
11 Test Reactor Area, the League has grave
12 reservations about the proposed decision to allow
13 the contaminated sediments in the deep water
14 perched pond to remain there.

15 A risk assessment based on mean
16 concentrations of contaminants is in danger of
17 understating the risk. This is of special
18 significance when the decision is to take no
19 action.

20 The League requests that the risk
21 assessment be repeated based on a model that
22 considers the highest concentration before a no
23 action alternative be found acceptable.

24 The League requests written
25 identification of the specific operable units under

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1 which each of the five ponds and basins listed as
2 sources of the shallow water perched system will be
3 evaluated. This information was not provided in
4 the June 26th, 1992 Dear Citizen letter.

5 The League also requests written
6 assurance that the sediments in the shallow Perched
7 Water System will be included in the RI/FS studies
8 for each of these operable units.

9 I'd like to point out that those comments
10 were based on that confusion that came from the
11 technical briefing, and it does illustrate the
12 kinds of problems we run into when we meet in a
13 room up here and deal with people over the
14 telephone in Idaho Falls. Having said that, we
15 prefer to have the opportunity to have that kind of
16 technical briefing than to have no opportunity at
17 all.

18 The League objects to the continued use
19 of the warm waste pond and the cold waste pond in
20 light of the decision to allow the contaminants in
21 the deep perched pond to remain as a source of
22 contamination to the Snake River Aquifer.

23 The League went on, and all of our
24 comments are in one document; so, I'll submit that
25 at the end, if I may.

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1 MS. GREEN: Thank you.
2 Lynn, can the court reporter be provided
3 a copy of what you read from, so she can verify it?
4 MS. MINEUR: Yes. I just have the other
5 two that I will read comments on.
6 MS. GREEN: Okay. Thank you.
7 MS. McREYNOLDS: My name is Mary
8 McReynolds. I don't have anything written out. I
9 have several concerns about this no action. The
10 first of which is that this particular system --
11 and it is a system -- starting with the top
12 sediment of the warm waste pond on down to the
13 aquifer that's been divided into four separate
14 operable units. Somehow it's a divide and conquer
15 that doesn't take into account that this is a
16 dynamic system and from one level will go to the
17 next.
18 And when we're talking about dealing with
19 related systems, we are not talking about dealing
20 with three basically no related no action systems.
21 We're talking about dealing with operable unit ten,
22 with operable unit twelve, with operable unit
23 thirteen and the entire aquifer as one full system.
24 They are all interrelated. What happens to one
25 will affect the other from the top down.

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1 I have problems with continued use of the
2 warm waste pond until 1993, and you're basing a no
3 action where you don't know what's going to happen
4 in 1993, as well as the main driver for the perched
5 fluid system, being the cold water waste pond,
6 which will be an operation which provides 85
7 percent of the water to the deep zone until the
8 year 2007 and being completely decommissioned in
9 2017. I find this rather confusing that you would
10 choose to put a no action when the whole system is
11 still in operation. You don't know.

12 I have problems with the use of mean
13 concentrations as opposed to range concentrations.
14 Again, this may understate the problem. I believe
15 that you should be using the highest concentration
16 level for what you are doing. And I don't know why
17 we were provided with the mean for this particular
18 aquifer unit when you go on to the motor pool, and
19 you give us range as well as giving us range in the
20 Auxiliary Reactor Area. And so -- and I didn't
21 have time to go to the administrative records and
22 look it up, but I believe that those things should
23 be given to us; and I think that it should be based
24 on the high end.

25 I have problems with the idea of the

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1 contaminants. Somehow it was explained to us that
2 the contaminants that are going to be held in the
3 subsurface level are going to be stabilized there;
4 and that they're going to be okay there until such
5 time as -- that you weren't really planning, it
6 didn't sound like at this time until we brought it
7 up in operable unit thirteen, to deal with these
8 sediments from shallow waste and the deep perched
9 -- or the shallow perched and the deep perched --
10 that they're going to be held there with, at this
11 point in time, nothing being done with it. Your
12 own research for pit nine on the types of natural
13 plants that grow in the area show that they have
14 root systems that extend down anywhere from ten to
15 twenty feet, which means that they can be brought
16 up.

17 The research for that project also shows,
18 biologically, there are animals in the area that
19 eat these things. I have real problems with this
20 being left there for that time frame. All of your
21 concepts are based upon a perfect system. You do
22 not take into account floods that I can see,
23 earthquakes -- and this does lie along the fault
24 line -- all of those things that are reality that
25 actually could happen are not being taken into

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1 consideration. Life does not run on a perfect
2 system.

3 We only know the concentrations for
4 contaminants for the warm waste pond. We don't
5 know them for any of the -- there are more than ten
6 other sites there, not just ones that you listed,
7 that contribute to the perched zone. We don't know
8 the contaminants in those.

9 Okay. That question was answered. So,
10 my feeling is, at this point, that we're being a
11 little precipitous in trying to put through a no
12 action while, one, the warm waste pond and the cold
13 waste pond are still being used. I don't see how
14 you can base any final decisions or assessments
15 when they're still being used. I don't see how you
16 can separate out the systems.

17 So, I hope that you'd have -- if you're
18 going to do this, that I would wish that they would
19 be reopened when you do, the whole operable unit
20 thirteen of the systems, you look at as a whole.
21 They're not separate; and that hopefully, the water
22 will be exhumed and the contaminants will be
23 exhumed at that time.

24 I would like a list of all contaminants
25 made public, not just those that are a concern.

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1 You get a bunch of things that are under one
2 percent, and these can come up to 20 percent real
3 quick. And they have an accumulated risk together.

4 And as my final statement, I would like,
5 at this time, because all of these things -- not
6 just this particular operable unit, but operable
7 units covering an entire INEL area -- are all
8 contributing to contamination in the Snake River
9 Aquifer. I feel that it is time that we move up
10 WAG 10 to the forefront so that when we're looking
11 at each of these separate things that are
12 contributing to contamination to the aquifer, we
13 can know exactly how much this area is contributing
14 to the overall aquifer. And we can decide, at that
15 time, whether or not that it's true that we should
16 be, indeed, cleaning this up or whether we can
17 leave it safely.

18 That's all.

19 MS. GREEN: Okay. Any volunteers for
20 oral comments.

21 MR. BROSCIOUS: My friends know that
22 sometimes a little comic relief is helpful for me
23 to keep from getting too caught up in things. This
24 is a cartoon that they sent. Thank you, Lynn.

25 The person that did this has a lot of

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1 extra time, in the tune of a couple of days, and
2 I'm willing to go into the administrative record
3 and go through the sampling data. You'll find some
4 interesting information, but it's not very readily
5 apparent which is which.

6 This particular data was -- has been
7 turned into English so you can at least understand
8 it, but this is sampling data underneath the test
9 reactor that --

10 MR. HOVLAND: I have a question for
11 clarification. When you say groundwater samples,
12 is it shallow perched, deep perched; or is it
13 distinguished there?

14 MR. BROSCIOUS: The data sheet didn't
15 specify.

16 MR. HOVLAND: Okay. So, it could be the
17 shallow or the deep perched?

18 MR. BROSCIOUS: It might be either one.

19 MR. HOVLAND: Or it -- and would it be
20 the Snake River Plain Aquifer, too?

21 MR. BROSCIOUS: It could be either of the
22 three.

23 MR. HOVLAND: Okay.

24 MR. BROSCIOUS: What's listed on here is
25 the -- the radionuclides, the concentration levels;

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1 and in this column, is what little information I
2 was able to glean out of the Environmental
3 Protection Agency concerning the current 1976
4 drinking water limit for contaminants.

5 The far column here is the number of
6 times over the EPA limits that this concentration
7 level represents. For -- and aside, it would be
8 interesting -- it might be interesting for you to
9 know that the drinking water limit is -- new
10 drinking water standards have been drafted, and the
11 plan is to promulgate these new standards.

12 The most significant part of it is that
13 the limits are being raised, not lowered. For
14 instance, cobalt-60, which is currently at a
15 hundred picocuries per liter, is being raised to
16 218 picocuries per liter. For chromium-51, which
17 is currently at 6,000, is being raised to 38,000.

18 Basically, my interpretation of that is
19 it's related to the Reagan/Bush administration over
20 the past twelve years to raise these limits because
21 the single largest polluter with respect to
22 radionuclides is the federal government. And it's
23 in their interest to raise these limits to minimize
24 the impact on them to clean up many of their sites.
25 And there's a significant conflict of interest with

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1 the polluters setting the standards.

2 In 1987, the EPA attempted to promulgate
3 new standards; and they were sued by the Natural
4 Resources Defense Council, and the courts threw
5 those standards out because they were not
6 protected -- they would not protect human health,
7 the standards that the EPA was trying to
8 promulgate. And, hopefully, some public interest
9 group will have the resources to be able to
10 challenge these new standards.

11 In this column over here, you can see
12 some pretty big numbers: 122,000 over the limit;
13 105,000 over the limit. In terms of half-lives,
14 many of these have really long half-lives. The
15 cobalt doesn't have such a long one. It's about
16 here. Cesium has 30 years. Americium-241 down
17 here has 432 years for a half-life. And that's
18 only its half-life. That doesn't mean that after
19 423 years -- or 32 years, that it's not going to be
20 toxic or dangerous.

21 Strontium-90 down here at the bottom, if
22 you can see it, has a half-life of 28 years.
23 Tritium has 12 years, plutonium-239 has 24,000
24 years. Europium-152 is 4,700 years. Europium-154
25 is 5,800 years. And europium-155 is 621 years.

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1 Down at the bottom, if you add these
2 curie concentrations up, you get over 4 million
3 picocuries per liter. This is underneath the Test
4 Reactor Area. This is what they want to walk away
5 from. And this is the information that you're not
6 getting from DOE, from the State or from EPA. You
7 won't find that in any of the mailings or the Dear
8 Citizen letters.

9 The issue has been brought up about the
10 relative impact of other sites around the INEL that
11 are contributing. And the fact that they're
12 looking in narrowly at only these individual waste
13 areas -- or operable units, not even -- they're not
14 even doing the whole waste area groups. So, I
15 think it's -- it's rather interesting to see
16 here -- this is, again, DOE data in terms of
17 sitewide what's been released.

18 The solid discharge to the environment
19 1952 to 1981 solid, this is radioactive waste
20 that's just been buried in underlying ditches.
21 It's not in any kind of a monitored retrievable
22 storage, eight million curies over.

23 The low-level liquid waste, which
24 "low-level" doesn't mean that it's not risky, it's
25 just a category, fifty-four curies. These are full

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1 curies. These aren't picocuries. Airborne
 2 releases, 52 to 89, over 13 million.

3 Now, these other categories down here,
 4 this is in storage. Solid waste, 74 million; high
 5 level liquid waste, this is primarily what's in the
 6 high-level liquid waste tanks. That's how much has
 7 been generated, 371 million. Calcine, this is
 8 what's in the calcine bin, 64 million.

9 Down at the bottom, is a total of all the
 10 radioactive waste that's been generated down there,
 11 either in storage or has been disposed, 531
 12 million. And there's a note at the bottom,
 13 suggests that it's -- that doesn't include spent
 14 fuel that's in storage down there. If it included
 15 the spent fuel, it would be many times over that.

16 MS. GREEN: Excuse me, Chuck. We've gone
 17 about eight or nine minutes into the five-minute
 18 commentary. Are you about to rap it up? If so,
 19 I'll let you finish up. If not, I'd like to ask
 20 that you provide the remaining --

21 MR. BROSCIOUS: I forgot to tell you, my
 22 name is Chuck Broschious, B-R-O-S-C-I-O-U-S,
 23 executive director for the Environmental Defense
 24 Institute. And you, too, can have a copy of our
 25 comments.

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1 MS. GREEN: For purposes of
2 clarification, the first table that you had up
3 there, the list of radionuclides and
4 concentrations, do you have specific reference for
5 that so that we can look --

6 MR. BROSCIOUS: Right there at the top.

7 MR. HOVLAND: Is that in your handout?

8 MR. BROSCIOUS: (Mr. Broschious nods
9 head.)

10 MS. GREEN: And the second table, for
11 purposes of clarification, does relate to the
12 entire INEL?

13 MR. BROSCIOUS: Right.

14 MS. GREEN: Thank you.

15 MR. BROSCIOUS: The position that the
16 Environmental Defense Institute has taken is that
17 the no action alternative is totally unacceptable;
18 that the -- at this present time, the contamination
19 in either the shallow or the deep perched zones is
20 acceptable. It can be pumped and treated.

21 The thing is, is that if that
22 contaminated wastewater is exhumed, pumped back out
23 to the surface and treated, it's not going to
24 migrate and further contaminate the aquifer. The
25 collective total comprehensive contribution to the

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1 aquifer is substantial. And any additional
2 contamination that can be remediated and simply can
3 be remediated, must be done.

4 MS. GREEN: Did we have another person
5 signed up? Yes, ma'am? Would you like to come to
6 the microphone or take the microphone wherever
7 you'd like to --

8 MS. REGELIN: Actually, I'm two people
9 tonight. The first one I'd like to do is read a
10 statement from two friends of mine who could not be
11 here. And their names are Patricia and Donald
12 Scott, S-C-O-T-T. And I will give you this.

13 And their statement is, We do not feel
14 that no remedial action is the proper solution for
15 dealing with the contamination in the Perched Water
16 System beneath the Test Reactor Area, the Motor
17 Pool Pond at the Central Facilities Area and the
18 Chemical Evaporation Pond at the Auxiliary Reactor
19 Area.

20 Dividing INEL into so many waste area
21 groups, and these into operable units, may make it
22 easier to manage the investigations; but this
23 fragmentation does not provide us with a total
24 picture. As in all of the, quote, below-risk
25 factors, end quote, of all of the operable units of

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1 all of the waste area groups together, might result
2 in a level which should demand remedial action.
3 It seems very important to have a preliminary risk
4 assessment of the whole area in order to come up
5 with valid solutions.

6 We wonder about the wisdom of averaging
7 the concentrations of contaminants found in
8 different areas. Using the highest concentrations
9 would change the picture drastically. Revisions in
10 what is considered safe concentrations for these
11 contaminants have always been downward instead of
12 upward, and it makes more sense to err on the
13 conservative side if we cannot be sure just what is
14 safe.

15 Finally, what are, quote, safe
16 concentrations, end quote, for all of the
17 populations, flora and fauna, found in the INEL
18 area? We do not believe that the safe
19 concentration level for the harvester ant, for
20 example, is known; yet the conclusion is made that
21 no harm will occur to humans or the environment.
22 Do we even know how many species are in the
23 environment?

24 Then for myself, I'm Louise Regelin. I'm
25 a local attorney. I'm a member of League of Women

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1 Voters, and I'm state president of the Idaho
2 American Association of University Women. And as
3 such, I work with and deal with my branches that
4 are all over the state, including branches in
5 Burley, Rupert, Twin Falls, Pocatello and Idaho
6 Falls. And a number of my people are quite
7 concerned about this, as I am.

8 First off, I want to say thank you for
9 this opportunity. We do appreciate being able to
10 have our input because many of us do express
11 statewide interest as opposed to, quote, parochial
12 interests. And my comments are really a
13 continuation as were expressed at the last
14 opportunity that we had in Moscow via speaker
15 phone.

16 And I want to raise those same three
17 issues because I still don't believe they've been
18 adequately addressed. One of them has already been
19 raised; and that is the fact that, for a lot of us,
20 we find that a decision for no action is not an
21 acceptable solution.

22 My first point that I raised, again,
23 earlier -- and I want to raise again because I feel
24 it has not been addressed -- is what options were
25 considered? We've never been made privy to that

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1 information. What did they cost? Why were they
2 rejected? And are those all the options?

3 I remember reading a book called The
4 Third Alternative, and that is that we need to
5 continually seek to find new and innovative
6 solutions. Why were the options that were chosen,
7 chosen? And in this case, the option of no action
8 is, I believe, not well supported. Why were other
9 solutions rejected? I don't believe that
10 information has been provided. And what factor
11 and/or element was regarded as the decisive factor?

12 The second one is what is the role of
13 this partial solution as a -- or choice, whichever
14 you want to call it -- in this total picture? What
15 is the cumulative effect or result of the fact of,
16 in effect, no action being taken? And I think a
17 number of other speakers have addressed that issue
18 very well. And that delaying is not going to
19 improve the situation.

20 We need progress. Costs will only
21 increase, if we want to look at the picture of
22 dollars. We are going to have to clean these
23 things up. The problems will more likely be
24 exacerbated, as an example, the perched water table
25 situation. The water will continue, through

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1 gravity and various other things, to migrate
2 further from the surface; and the risk levels will
3 rise. And, of course, the cost.

4 The third one is why do we, as citizens,
5 not have the right to be involved and informed at
6 all levels during these procedures? Because we can
7 like it or not, but we're all part of the Snake
8 River system, which is part of the Columbia River
9 system. And, indeed, that aquifer that we're
10 talking about down there, whether we're talking
11 about the Lost River or the Snake River, are part
12 of the same system.

13 And I think as anyone one who works, as I
14 frequently do, with future development water in
15 this part of the world and probably in the entire
16 world, will be the critical element that will
17 determine whether there will be development or no
18 development.

19 So, a cure, if you want to call it that,
20 or a complete solution can be effected in the near
21 future, meaning before the turn of the century. If
22 we wait longer than that, I'm not at all convinced
23 that a solution can be achieved. Remediated
24 action, possibly, but nothing that would be a,
25 quote, solution.

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1 I appreciate the fact that we are making
2 progress. I think having real bodies here this
3 time is a step in the right direction. However,
4 I'm afraid we're not making progress fast enough,
5 particularly in the efforts to take remediation.

6 We do need information, and Mr. Broscious
7 has just given us some specificity. And while I
8 know that numbers can be made to jump through
9 hoops, I do think cumulative effects are something
10 that have not been adequately addressed. So, I
11 would ask that the powers that be act now to make
12 proactive decisions rather than no active decisions
13 and to make those decisions keeping the benefit of
14 both the people of the area, not just Idaho, but
15 the whole Pacific Northwest and country and our
16 environment in mind. And the decisions that have
17 been proposed in these three situations, I don't
18 feel do that.

19 Thank you.

20 MS. GREEN: Are there any others wishing
21 to make oral comments tonight on the Perched Water
22 System?

23 (No response made.)

24 MS. GREEN: Okay. With that, I'd like to
25 remind you that if you do have additional comments

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1 you'd like to make before the close of the comment
2 period on this, that you may provide additional
3 written comments until the close of that period,
4 August 5th, 1992.

5 And if we could take approximately a
6 15-minute break between the two portions of the
7 meeting; and when we resume, we will discuss the
8 CFA Motor Pool Pond and the ARA Chemical
9 Evaporation Pond.

10 UNIDENTIFIED PERSON: Could that just be
11 a 10-minute break because there's a lot of us that
12 want to go home, too.

13 MS. GREEN: I'll second a ten-minute
14 break.

15 UNIDENTIFIED PERSON: Ten minutes.
16 (Whereupon, the proceedings were in
17 recess from 8:30 p.m. to 8:45 p.m., and the
18 following proceedings were had and entered of
19 record.)

20 MS. GREEN: Reuel, I believe you have an
21 introduction to make.

22 MR. SMITH: Yes. I'd like to introduce
23 Betty Benson, local legislator from the Moscow
24 area. Is it a floateral district or....

25 MS. BENSON: No. It's just District 5.

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1 MR. SMITH: And I just appreciate you
2 being here and wanted to recognize that.

3 MS. GREEN: Okay. From here on out,
4 we'll be talking about the Motor Pool Pond and
5 Chemical Evaporation Pond proposed plans. And, as
6 I mentioned before, we combined these because
7 they're similar. They're both relatively small
8 sites. They're both pond sediments from inactive
9 ponds. They're no longer in use. A similar
10 approach was used in evaluating them. And in each
11 of them, we have arrived with the same proposal of
12 no action.

13 I'd like to reintroduce respective
14 managers of these sites for EPA and the State. On
15 my immediate left is Tom Stoops, who is the project
16 manager for the Chemical Evaporation Pond.

17 At your far left, is Dave Frederick, who
18 is the State's project manager for the Motor Pool
19 Pond. And at your far right is Linda Meyer, who
20 is, again, representing EPA on all three plans here
21 tonight.

22 With that, Nolan, I guess I'll turn
23 things back over to you to present the Motor Pool
24 Pond. Nolan is also the project manager for DOE
25 for this project, also.

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1 MR. JENSEN: Okay. I've got it. Okay.
2 These two presentations will go a little more
3 quickly. This one is the operable unit four dash
4 eleven. As you can see, it's the Motor Pool Pond
5 at the Central Facilities Area.

6 And what this focuses specifically on, as
7 shown at the bottom of the slide here, is
8 evaluating the sediments in the ponds, the
9 contamination in the sediments.

10 Okay. This -- could you maybe -- let's
11 show another photograph of the pond first.

12 MR. SMITH: Okay.

13 MR. JENSEN: It's the third one down
14 there. Just to remind you what the pond looks
15 like -- that was a bad idea. Forget it.

16 MR. SMITH: Here it is.

17 MR. JENSEN: Sorry, Reuel. Okay. This
18 is a photograph of the Motor Pool Pond or what used
19 to be the pond. It's about that area right there.
20 And this little sign right here, just in case
21 you're interested, all of the sites that will be
22 looked at under the agreement, the federal facility
23 agreement, have these little signs out there to
24 mark them. And that's what that little sign is.

25 Okay. What is the story behind the Motor

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1 Pool Pond? This is the service station at the
2 Central Facilities Area. It's bigger than the one
3 you have downtown here; but essentially, it does a
4 lot of the same things. This is for the fleet
5 vehicles and the equipment that are used out at the
6 site. And they do maintenance, oil changes, that
7 sort of thing, at the service station.

8 This is a photograph of one of the bays
9 inside of the service station. What happens is, as
10 the operations go on in here, some of the liquids,
11 like grease or oil, come off of the vehicles and go
12 into these grates here and go into a sump or a
13 vault underneath.

14 This next photograph is a wash bay on the
15 outside of the service station, and vehicles are
16 washed here. And the wash water goes into this
17 grate and, again, into a sump. After it goes into
18 the sump, there is a pipe connected to it. And it
19 comes -- this is the service station back here.
20 The water comes through a pipe. This is
21 approximately east that the pipe would come from
22 the station. It outflows at the back of this
23 ditch, runs along the ditch and then into the Motor
24 Pool Pond.

25 And, again, I spoke in present terms; but

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1 that operation hasn't been going on since 1985.
2 The pond hasn't had any discharge since 1985.

3 MR. BROSCIOUS: Excuse me. If I were to
4 take your characterization of that, it would be
5 just like the Conoco station a half a block away up
6 here that just simply does routine maintenance and
7 that sort of thing, which is simply not the case.

8 That particular facility has been used to
9 decontaminate vehicles, as I pointed out in the
10 briefing. And, also, as cited here, it's been
11 standard operating practice to minimize the spread
12 of contamination from the site. Obviously,
13 vehicles pick contamination up as they travel
14 around the site. There's contamination that ends
15 on the top -- or wherever on the vehicles, in
16 addition to other vehicles that stay on the site.

17 And it has been used for decontamination.
18 Otherwise, you wouldn't have ended up with
19 radionuclides in the pond. And I really object to
20 your characterization that it's just some ordinary
21 shop that just simply washes vehicles, because it's
22 not just an ordinary shop that washes vehicles.
23 It's a decontamination place. Maybe not a high
24 level decontamination -- I'm not saying it's a hot
25 spot, but please be candid.

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1 MR. JENSEN: I was being candid.
2 Bill, is it used for decontamination or
3 just washing?
4 MR. PIGOTT: They pressure wash the
5 vehicles before they take them in.
6 MR. JENSEN: Right.
7 MS. GREEN: I think if I can -- I think
8 Chuck is saying de facto decontamination. I mean,
9 it may not be intended to be high-level
10 decontamination; but, in fact, just due to the
11 presence of some of the radioactive contamination
12 in the pond, we know that it must have washed off
13 some contamination.
14 Is that a fair representation, Chuck?
15 MR. JENSEN: And, again, in no way do I
16 mean to minimize that. But I'm just trying to
17 explain the operations, and they are normal
18 maintenance operations. That's what it's there
19 for. However, as you will see, it did cause
20 contamination.
21 UNIDENTIFIED PERSON: And it hasn't been
22 in operation since '86?
23 MR. JENSEN: It was taken out of
24 operation in '85, the pond was. The service
25 station is still there.

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1 UNIDENTIFIED PERSON: Thank you.

2 MR. JENSEN: Okay. What was done to find
3 out what was there, in 1989, fifty-one samples were
4 collected at the -- at the Motor Pool Pond.
5 Samples were collected at various depths from zero
6 to fifteen feet.

7 And the next slide, we'll show you the
8 contaminants that, in the risk assessment, were
9 found to be of greatest concern. And especially
10 the ones that are highlighted here were of
11 particular concern.

12 Okay. What was, as far as exposure --
13 yes?

14 MS. MINEUR: Could you go back
15 to that slide?

16 MR. JENSEN: Yes.

17 MS. MINEUR: Can you tell me --

18 THE REPORTER: I can't hear her.

19 MS. GREEN: Lynn, you need to speak
20 up.

21 MS. MINEUR: Can you tell me what portion
22 of the risk the highlighted contaminants were?

23 MR. JENSEN: Go ahead, Dave.

24 MR. FREDERICK: Sure I can.

25 MR. JENSEN: Dave's got that right off

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1 the top of his head.

2 MR. FREDERICK: For the carcinogenic
3 risk, there is -- 46 percent of it is for -- from
4 the PCB. The beryllium is 15 percent; barium-137M,
5 which is a decay product of cesium-137, contributes
6 about 20 percent of the risk. And the
7 plutonium-239 contributed 2 percent.

8 MS. MINEUR: What was PCB? Did you say
9 45 percent?

10 MR. FREDERICK: 46 percent.

11 MS. MINEUR: Thank you.

12 MR. BROSCIOUS: And there was no
13 cobalt-60 in there?

14 MR. JENSEN: I don't remember if it was
15 detected or not.

16 MR. STANISICH: No, not detected.
17 That's indicative of the fact cobalt-60 was not
18 detected in that pond. And that would indicate
19 that the contaminants were -- that the contaminants
20 were introduced to the pond some time ago because
21 cobalt-60 and cesium-134 are gamma-emitting
22 radionuclides with short half-lives.

23 MR. JENSEN: This is Nick Stanisich, by
24 the way. He did some of the work on this project,
25 a lot of the work on this project. And Mike Spry

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1 sitting next to him did a lot of work on this
2 project.

3 MR. BROSCIOUS: Excuse me, but the
4 administrative record does mention cobalt-60. It
5 also mentions potassium-40, lead-212, radium-226
6 and radium-226. I'm sorry, lead-212, radium-226.

7 MR. JENSEN: Are you looking -- are you
8 sure you're not looking at ARA, the next one? I
9 don't know. We'll check.

10 MR. BROSCIOUS: Central facility.

11 UNIDENTIFIED PERSON: I'm sure that
12 cobalt-60 was not detected. Potassium-40 may have
13 been detected, but it's a natural occurring
14 radionuclide. So, if it was detected, it certainly
15 wasn't due to any contribution from wastewater from
16 the CFA Motor Pool Pond.

17 MR. JENSEN: Okay. Let's -- let's look
18 at now the exposure roots that were evaluated for
19 the Motor Pool Pond. First of all, there
20 were -- there were both occupational exposures
21 evaluated. And, again, similar to the Perched
22 Water System, it was evaluated what would happen if
23 someone moved out there and lived there in the
24 future.

25 In both cases what was evaluated were the

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1 impacts of breathing sediments, contact with the
2 skin or dermal absorption, ingestion of the soil
3 and the contaminant and then exposure to the
4 radiation, direct exposure.

5 So, now going directly to the results of
6 those calculations, as you can see here, for the
7 occupational scenario, which is -- right now there
8 are about 1200 people employed at CPA. And this --
9 this is just to, again, point out the fact that it
10 is -- INEL is a restricted access area. And the
11 occupational scenario was the one that was
12 evaluated for the current period for today.

13 And, as you can see, for carcinogenic
14 risk -- this is carcinogenic risks -- the
15 calculations came out to one in one million
16 incidents.

17 UNIDENTIFIED PERSON: Excuse me, in your
18 table, you've got four in a million. Table two in
19 the Dear Citizen letter, page B-6, total worker
20 risk, site-specific, four in a million.

21 MR. JENSEN: Okay. That's the difference
22 between -- that's the difference between the
23 default and the site-specific; is that right?

24 UNIDENTIFIED PERSON: No. That is
25 site-specific. Default is four in 10,000.

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1 MR. JENSEN: Which one? Do we have a
2 typo? Okay. We may have a typo. We may have a
3 mistake in our proposed plan. This is out of the
4 RI report?

5 UNIDENTIFIED PERSON: Yeah. That is not
6 what we have.

7 MR. JENSEN: Okay. That may be a
8 mistake.

9 UNIDENTIFIED PERSON: Definitely is a
10 mistake.

11 MR. JENSEN: Okay. We've got an error.

12 UNIDENTIFIED PERSON: That whole column
13 on carcinogenic risk A doesn't match what we have.
14 Just for the radionuclide chemicals and the
15 occupational --

16 UNIDENTIFIED PERSON: These are the right
17 numbers.

18 MS. REGELIN: Where did these numbers
19 come from?

20 MR. JENSEN: Obviously, there
21 was a mistake in communications or a typographical
22 error or something. The numbers for that should
23 have come from the remedial investigation report.
24 We can show you the remedial investigation report
25 where those were summarized, and it matches up with

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1 this table.

2 MS. GREEN: Nolan, what are the
3 differences between what's in the plan and what's
4 up there?

5 MS. REGELIN: A lot.

6 MR. JENSEN: Yeah. There are a few.
7 Let's see, the first one -- yep. This is
8 it. Okay. The first one is -- let me go to the
9 screen here. The first one is in the plan. This
10 is three instead six in the plan. That one is the
11 same.

12 UNIDENTIFIED PERSON: And look at the
13 ratio, please.

14 UNIDENTIFIED PERSON: Three in ten
15 thousand instead of six in a hundred thousand.

16 MR. JENSEN: So, we put a number that was
17 too high in the proposed plan for the default
18 value.

19 MS. GREEN: Right. The numbers that are
20 in the proposed plan consistently -- show
21 consistently greater risk than what is really in
22 the remedial investigation report. And these are
23 the correct numbers.

24 UNIDENTIFIED PERSON: How do we know
25 that?

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1 MS. REGELIN: This is your official
2 publication to the public saying these are the
3 numbers.

4 MS. GREEN: I guess they -- what also
5 needs to be identified is the numbers that are in
6 this plan would not -- they're still within the
7 acceptable risk range essentially. That would not
8 change the proposal.

9 UNIDENTIFIED PERSON: Actually, they're
10 not because the acceptable risk range was one in
11 ten thousand to one in one million. And what we
12 have here is four in ten thousand to four in a
13 million. So, they really aren't in an acceptable
14 range.

15 MR. BROSCIOUS: They're not the right
16 numbers.

17 UNIDENTIFIED PERSON: I know they're not
18 the right numbers but --

19 UNIDENTIFIED PERSON: We didn't know
20 that.

21 UNIDENTIFIED PERSON: Yeah. And nobody
22 said any different than when we went through with
23 -- because I believe when we look at the technical
24 briefing --

25 MR. JENSEN: I think in the proposed

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1 plan -- let's see, those are still all within -- in
2 both cases, all within the -- within the range.

3 MS. GREEN: The four in ten thousand is
4 the default. And the site-specific is well within
5 the range. And that's what the actual risk
6 management decision would be based on.

7 UNIDENTIFIED PERSON: But my point is
8 this: For instance, as an example, the first
9 heading under site-specific, in your printed
10 materials, it says three in one billion. Up there
11 it says seven in ten million. You have to
12 understand my suspicion as to -- are you lying
13 here? Or are you lying there? Or are both of them
14 wrong?

15 MR. JENSEN: The proposed plan was
16 supposed to come from the RI report; and Dave
17 picked up one mistake, and we corrected that one.
18 I thought we checked it several times. So, these
19 are the correct numbers. And these are the ones in
20 the report, correct?

21 MR. STANISICH: These are the ones in the
22 report. I'll show them to you, if you'd like.
23 These are the numbers we calculated. They're the
24 same as those numbers. And it's not a matter of
25 someone lying to someone else. It's a matter of a

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1 typographical error or a mistake in
2 miscommunications. If you'd like to see these, I'd
3 be glad to show them to you.

4 Would you like copies of this?

5 UNIDENTIFIED PERSON: It would be nice.

6 MS. GREEN: Do we have a Xerox here that
7 we can go have copies made for everyone?

8 MR. SMITH: Do you want to talk to that
9 any longer?

10 MR. JENSEN: Not unless there are
11 questions.

12 MR. BROSCIOUS: In terms of your
13 contaminants of concern in rating the Oak Ridge
14 survey sampling, which found organics that are not
15 listed on your contaminants of concern, which
16 included the 2-butanone at levels of 190 micrograms
17 per kilograms -- or whatever "ug" stands for.
18 Trichloroethane at 25 ug; toluene, which also isn't
19 listed, at 32 ug per kilogram; methylene chloride,
20 which isn't listed, at 460 ug per kilogram; acetone
21 at 85 ug per kilogram; tetrachloroethylene at 76
22 ug; 4-methyl 2-pentanone at greater than 8,300 ug
23 per kilogram. At least nine of these organic
24 contaminants exceed EPA CRQL criteria and are not
25 listed here.

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1 MS. GREEN: I think Nick can respond to
2 that question.

3 MR. JENSEN: Go ahead, Nick.

4 MR. STANISICH: Okay. The organic
5 contaminants that you're referring to, the
6 environmental survey did -- in approximately 1987
7 or '88 -- I can't recall which year -- several of
8 those contaminants that you listed were detected in
9 the pond from our sampling also. But during the
10 concentration toxicity screening process, they were
11 eliminated because they don't -- they didn't add
12 any additional risk. They were at such low
13 concentrations.

14 Other things like 2-butanone are commonly
15 found in all soil samples and are generally
16 disregarded. The concentrations are -- are quite
17 low, and they were all in the micrograms per
18 kilogram range, which is parts per billion.

19 It's not that we didn't disregard these
20 chemicals, nor did we know they existed. One, our
21 sampling didn't confirm some of their results. And
22 in those instances where our sampling did confirm
23 their detections, it turns out that they were at
24 such low concentrations that they didn't add any
25 additional risk or any significant risk; and

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1 therefore, they weren't added into the risk
2 assessment.

3 MS. MEYER: Chuck, you were referring to
4 the CRQL, and those are quantitation limits. So,
5 it's a method, when you analyze a sample, that's
6 the maximum level at which you can quantitatively
7 state it's actually there.

8 MR. STOOPS: It's part of what's required
9 by EPA protocol. Your lab has to be able to detect
10 to that level

11 MS. MEYER: It's a testing method.

12 MR. STANISICH: It's not a level that is
13 a contaminant clean-up level or anything like that.

14 MR. BROSCIOUS: I'm not suggesting it is.
15 But significant amounts of it were detected, you
16 know. I don't know when the Oak Ridge thing was --

17 MR. STANISICH: '87 or '88.

18 MR. BROSCIOUS: It's not that old.

19 MR. STANISICH: No, it isn't that old.
20 And, like I'm saying, their sampling was designed
21 to take a quick look at the CFA Motor Pool Pond
22 sediments. I believe they took probably three or
23 four samples in three locations. Whereas, we did a
24 much more extensive investigation at 51 locations.
25 We must have taken -- I don't know -- 160 samples,

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1 something like that. That's just a guess, but
2 quite a few.

3 It's like I stated earlier, our sampling
4 validated some of those detections; and we agree
5 that there's methylene chloride and toluene in the
6 pond, but they were at low enough concentrations
7 that they don't add significant risk. Some of the
8 others that you described, we didn't detect.
9 Although, we sampled for those compound levels.

10 MS. MINEUR: Can you go back to the slide
11 that --

12 MR. JENSEN: Do you want to give her the
13 mike?

14 MS. MINEUR: The question that I asked
15 earlier, and I'm just trying to make sure I
16 understood what you said, was the PCB and the
17 beryllium together constituted 61 percent. And in
18 the technical briefing, we were dealing with
19 much higher numbers. We were talking about
20 concentrations that were driving the risk
21 assessments to like 80, 95 percent.

22 I don't understand, if those two
23 together are just 65 percent, it seems to me that
24 40 percent or 35 percent of other elements is a
25 significant amount; and the same on the

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1 radionuclides. With the Barium and Plutonium, if I
2 wrote down the right numbers, they only constitute
3 22 percent. So, either I'm not understanding how
4 this process works; or I did write down the wrong
5 numbers.

6 MR. FREDERICK: Okay. Can you hear me
7 all right? Everybody hear me okay? The two are
8 summed, for starters. What I -- the numbers I gave
9 you were to address total carcinogenic risk. So,
10 if you had 61 percent from the chemicals and 22
11 percent from the radionuclides, that would leave
12 you with 83 percent. And going over the list here,
13 it appears that one more radionuclide should be
14 highlighted. That would be americium-241, which
15 constitutes 15 percent of the risk.

16 MS. MINEUR: So, americium, alone, is
17 15 percent?

18 MR. FREDERICK: 15 percent, correct.

19 MS. MINEUR: Thanks. That makes
20 sense.

21 MR. FREDERICK: Does that clarify your
22 question all right?

23 MS. MINEUR: Yes. Thank you.

24 MR. FREDERICK: Good.

25 MR. JENSEN: Okay. Now, do we have our

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1 slides?

2 Okay. Now, do these match the proposed
3 plan? Again, this is for future residential. It
4 was looked at in 30 years from today and at 100
5 years from today. And is this the 100-year number?
6 I'm trying to remember now. Is this the 100-year
7 number?

8 MR. STANISICH: 100 years, yes.

9 MR. JENSEN: Okay. And that's the --
10 that's the carcinogenic risk. This is the
11 noncarcinogenic risk number, and it's point seven,
12 which is less than the hazard index of one. So,
13 again, quickly, as you know, we're recommending
14 that no action be taken on this site either.

15 Okay. Any questions before we move on to
16 the next one?

17 MS. GREEN: The way the agenda is set up
18 is that unless there are specific questions of
19 clarification on this presentation, we'd like to
20 move on to the motor -- or to the Chemical
21 Evaporation Pond and then deal with general
22 questions on both of those before we go into the
23 public comment session.

24 MS. REGELIN: Point of information. We
25 discussed or was presented to us that this drainage

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1 used this ditch. Was any -- and we mentioned there
2 was 51, I believe, test sites. Was any testing
3 done in the ditch?

4 MR. JENSEN: Yes. Do you remember how
5 many?

6 MR. STANISICH: Yes, at several
7 locations

8 MS. REGELIN: In the bottom, I hope.

9 MR. STANISICH: I hope so, too. No, I
10 know for a fact.

11 MR. FREDERICK: I might like to point out
12 to further address your question, there's sediments
13 piled along the ditch that were apparently
14 excavated from the ditch to improve the flow of
15 water. And they were sampled as well.

16 UNIDENTIFIED PERSON: Do you have another
17 one of those nice little charts that shows where
18 all the samples were taken?

19 UNIDENTIFIED PERSON: I think there are
20 diagrams in the RI.

21 MR. JENSEN: Pull that out of there.

22 MR. FREDERICK: There's a map.

23 UNIDENTIFIED PERSON: And just one
24 question. These guys are -- all of these
25 contaminants are also tested against background; is

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1 that correct?

2 MR. STANISICH: Not all.

3 UNIDENTIFIED PERSON: Not all? Well,
4 certain things like the man-made products they
5 didn't test against background; but the ones that
6 are natural occurring, you test against background
7 as well?

8 MR. STANISICH: We compare against
9 background to offer perspective. We don't
10 eliminate any compounds in the risk assessment
11 based on comparison to background, but to offer
12 perspective.

13 UNIDENTIFIED PERSON: Okay.

14 MR. STANISICH: For the CPA Motor Pool
15 Pond, we didn't subtract background for any of the
16 contaminants.

17 MR. JENSEN: Are you done?

18 MR. STANISICH: Yes. We didn't subtract
19 background for any of the contaminants, but we did
20 go into a lengthy discussion of background and how
21 these numbers compare to background.

22 UNIDENTIFIED PERSON: Okay.

23 MS. REGELIN: It doesn't make any
24 difference.

25 UNIDENTIFIED PERSON: You're going to

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1 have to bring it over here

2 MR. JENSEN: This is a foldout in the RI
3 report that you can see in the administrative
4 record. It's in the back

5 MR. STANISICH: This is where the pipe
6 comes in. The outlet is right here. This is the
7 ditch, and these are the samples taken in the pond.
8 These are samples taken in the ditch. Now, it
9 doesn't look like there were a lot of samples in
10 the ditch; but what we did is we took composite
11 samples. Took samples about every ten or twenty
12 meters, I'm not sure, and composited them and then
13 sampled that volume. Got representation of the
14 entire ditch.

15 UNIDENTIFIED PERSON: The entire length
16 of the ditch is what?

17 MR. STANISICH: I want to say 550 feet,
18 but I'm not sure.

19 MS. REGELIN: My question is, Were there
20 51 samples and 51 sites?

21 MR. STANISICH: Sample locations.

22 MS. REGELIN: There ain't that many
23 red dots.

24 MR. STANISICH: Well, what you see
25 here is the numbers that are stacked vertically,

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1 there were samples taken at depth -- different
2 depths. And that's what you're seeing here. And
3 then there are replicate samples in here as well.

4 UNIDENTIFIED PERSON: What are all these
5 down here at the bottom?

6 MR. STANISICH: Those are the
7 backgrounds. That's where we took the background
8 samples.

9 UNIDENTIFIED PERSON: What's separating
10 this ditch? What's all of this topographical down
11 to here?

12 MR. STANISICH: What we've got here,
13 this is an old gravel pit that was used probably to
14 construct this road. These are a couple of stock
15 piles of some -- of gravel or topsoil, perhaps; and
16 this is an undisturbed area back here.

17 UNIDENTIFIED PERSON: Is that a roadway
18 that's going past there?

19 MR. STANISICH: Yeah, I believe so.

20 UNIDENTIFIED PERSON: Where's the gravel
21 from?

22 MR. STANISICH: These piles?

23 UNIDENTIFIED PERSON: Yeah.

24 MR. STANISICH: Well, actually -- no,
25 I'm looking at that wrong. Those are depressions.

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1 Those are where they excavated addition -- I'm
2 sorry, yes, they're additional barrow pits.

3 Okay. Anything else on this?

4 MR. BROSCIOUS: Could you tell me what
5 the comparable toxicity between 4-methyl
6 2-pentanone is in comparison to the other chemicals
7 that you found?

8 MR. JENSEN: No.

9 MR. BROSCIOUS: Okay.

10 MR. JENSEN: 4-methyl --

11 MR. BROSCIOUS: Because -- I'm sorry, I'm
12 still going back to Oak Ridge. But they found
13 8,300 micrograms per kilogram as opposed to the
14 PCB's, which were at 1,407 micrograms. I'm just
15 curious of what the toxicity would be.

16 MR. STANISICH: We have a slide with that
17 on it. What you have to look at is -- we have a
18 slide that I'll show you now. But what you have to
19 look at in comparison is not only the toxicity, but
20 the concentrations too. The amount there plus the
21 concentration adds up. So, there's two things
22 involved in that.

23 MR. BROSCIOUS: That's what I'm
24 suggesting, because there's eight times the
25 concentration of the 4-methyl.

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1 MR. STANISICH: Okay. As you can see in
2 the screening process, we did look at 4-methyl
3 2-pentanone -- now, what did you want it compared
4 to? PCBs, aroclor-1260; is that correct?

5 MS. REGELIN: I thought it was the --

6 MR. STANISICH: Tetrachloroethylene or
7 trichloroethane?

8 MS. REGELIN: That was the butanone or
9 whatever it is.

10 MR. STANISICH: The concentration, the
11 maximum soil concentrations are in this column, the
12 milligrams per kilogram that we detected, not
13 enough from Oak Ridge's detections.

14 MR. BROSCIOUS: I can't imagine that high
15 of a concentration would just sort of disappear and
16 does for years.

17 MR. STANISICH: As you can see, when
18 the -- when the reference dose, the measure of
19 toxicity, is multiplied by the concentration, then
20 we come up with a number here. All those numbers
21 are added up to normalize. And then each one, a
22 percentage of contribution is listed in this
23 column. Not a percentage, but the ratio. And then
24 the percentage is listed in this column.

25 So, we can see when the toxicity is

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1 multiplied by the concentration, these are the
2 values you get. And most of them did not
3 contribute significantly. They were all less
4 than -- well, actually they're all -- really,
5 these are -- and I agree with you, you read about
6 these things in the papers. People talk about them
7 in terms of, Oh, they're toxic substances or
8 carcinogenic substances; but in the respective
9 concentration and toxicity compared to the other
10 contaminants, they turned out not to be.

11 MS. GREEN: For this specific site.

12 MR. STANISICH: Yeah, for this specific
13 site, they turned out not to be important. For
14 other sites, they may be important when they're
15 compared to other contaminants.

16 MS. GREEN: If there are no other
17 specific questions on the CFA Motor Pool Pond
18 presentation, we'll go to the presentation on the
19 Chemical Evaporation Pond. Before we do that, I'd
20 like to now introduce Randy Bargelt. Randy is the
21 project manager for EG & G Idaho on this project,
22 and he will give a brief presentation on the
23 Chemical Evaporation Pond.

24 And then I'd like to remind you, again,
25 that after he's completed his presentation, there

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1 will be another opportunity for general questions
2 and answers on both of these two -- last two plans.
3 And then we'll go into the formal public comment
4 session on both the Chemical Evaporation Pond and
5 the Motor Pool Pond.

6 Randy?

7 MR. BARGELT: Thank you, Lisa. As Lisa
8 said, I'll present the presentation for operable
9 unit 5-10, which is Chemical Evaporation Pond,
10 waste area group five, which includes the Power
11 Burst Facility area, which we talked about four
12 months ago and the Auxiliary Reactor Area.

13 And similar to the Motor Pool Pond, we
14 are talking, again, about just the sediments and
15 the risks those pose to human health and the
16 environment.

17 Okay. This is the Auxiliary Reactor
18 Area-I facility here, and the -- the Auxiliary
19 Reactor Area is composed of four facilities. And
20 all those facilities around here are shut down and
21 not being used any more and are scheduled for what
22 we call
23 D and D, which is decontamination and
24 decommissioning.

25 Right here is the -- this is the outer

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1 limit of the Chemical Evaporation Pond. And you
2 can see right here, there's an area that's wet.
3 And this picture was taken when the pond was -- was
4 used. And the pond was used from 1971 to 1988.
5 And wastewater was discharged from this building
6 here through a discharge pipe to the pond.

7 And if you notice the green area right
8 here, you can tell there is some vegetation that
9 has started to grow because it's been wet there for
10 quite a period of time.

11 This is a schematic diagram of the
12 picture you just saw. And housed in this building
13 during that time, again, from 1971 to 1988, was a
14 print shop, a radiological lab and a materials
15 testing lab. And wastewater was discharged
16 about -- about 300 feet through a pipe to the
17 Chemical Evaporation Pond. And the area here, if
18 you notice by the star, was the area of highest
19 concentration, which is basically the same area you
20 saw where the vegetation was in the previous
21 picture. That was about 100 square feet.

22 This is a picture that was taken about
23 two weeks ago. And you'll notice vegetation is now
24 dying off. And that area where the star was is
25 this area here. And also, an area of higher

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1 concentration within that was right in this area
2 where the discharge pipe discharged to the pond.

3 A picture of the pond again, which is
4 right in here, stressed vegetation and the building
5 that housed the lab and the print shop. And this
6 looks very similar to the previous presentation.
7 During the last characterization in '90, we took
8 160 samples, and those samples were taken from the
9 surface to the top of the basalt. And then the
10 maximum depth to the top of the basalt with the
11 alluvium, was four feet. It averaged about two
12 feet. So, the sediments are very thin in this
13 area. And we did determine the nature and extent
14 of the contamination within that 100 square foot
15 area.

16 Similar slide; different contaminants.
17 The contaminants we were concerned with were called
18 out in the toxicity screening. And these are the
19 contaminants of concern or the risk drivers,
20 essentially, for the risk assessment on this
21 project.

22 UNIDENTIFIED PERSON: Just so we can see
23 if we've got similar numbers because our numbers
24 have been different between the technical briefing
25 and these, what I have down under carcinogenic risk

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1 is for cesium-134 and 137 to be 35 percent of the
2 occupational risk.

3 MR. BARGELT: We prepared some pie charts
4 after the briefing we had with you to show you
5 this.

6 MR. STANISICH: For the -- for the
7 occupational risk -- and this relates specifically
8 to direct exposure. Now, this talks about direct
9 exposure from radionuclides to a person who may
10 enter the pond. And, as you see, I'm not so sure
11 about what the numbers you got over the phone were.
12 But cobalt-60 is a big contributor. Cesium-134 is
13 a big contributor, and barium-137 or cesium-137 is
14 also another big contributor from direct exposure.
15 At this point in the pond, direct radiation is the
16 overriding risk driver. It far outweighs all the
17 others.

18 MR. BARGELT: Does that answer your
19 question?

20 MR. STANISICH: And that's just for the
21 occupational scenario as it exists now.

22 UNIDENTIFIED PERSON: Okay. What about,
23 then, the residential --

24 THE REPORTER: I can't hear her. I
25 didn't hear her question.

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1 MS. GREEN: Could you repeat the
2 question, please, for the court reporter?

3 UNIDENTIFIED PERSON: Oh, yeah. I just
4 wanted to know, we received some numbers during the
5 technical briefing about the contaminants of
6 concern and what percentage points they were. And
7 some of them related to occupational safety; some
8 to residential. And I wanted him to confirm these
9 numbers just because we've had differences in
10 numbers between the two.

11 MR. STANISICH: Okay. The period of time
12 is shown there, thirty years. And this is -- we
13 have -- we did two scenarios. Site specific and a
14 default that you're well aware of from looking at
15 that. And you can see the breakdown. And what has
16 happened since -- from times zero to thirty years
17 is that short-lived radionuclides have disappeared,
18 and the longer-lived radionuclides have started to
19 increase in their contribution to risk.

20 Barium-137 has a longer half-life than
21 cobalt-60. And you see it's increased to 40
22 percent. Plutonium-239 has increased 26 percent;
23 uranium-234 to 13 percent. This is a fairly
24 long-lived gamma-emitting radionuclide. This is a
25 long-lived alpha-emitting radionuclide.

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1 And uranium-234, interestingly enough, is
2 a natural-occurring radionuclide. But since it was
3 in -- in a ratio to uranium-238 that would seem to
4 be above what's normal, we included it in the risk
5 assessment anyway; took a very cautious approach.
6 And as you see, the inorganic chemicals arsenic,
7 chromium and others, contribute about 17 percent of
8 the risk total.

9 So, thirty year, it's -- barium-137 is
10 really pushing things along.

11 UNIDENTIFIED PERSON: Thank you.

12 MR. STANISICH: Default is not much
13 different. I don't know if you want to spend too
14 much time on that.

15 UNIDENTIFIED PERSON: Not really. And
16 these numbers are different than what we got
17 before. So, thank you.

18 MR. STANISICH: Telephone communications
19 are -- do you want to look at the hundred years, or
20 do you want to....

21 UNIDENTIFIED PERSON: You might just
22 throw it up there. I would like to look at it just
23 to -- I don't know if I'm going to jot down the
24 numbers, but I'll take a look.

25 MR. STANISICH: Okay. So, what happens

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1 here, the longer-lived radionuclides even start to
2 show up as being more important. plutonium-239 and
3 uranium-234 start to show up as being more
4 important just as you might expect, because they're
5 still there where the short-lived radionuclides are
6 gone. But all this time, the risk is decreasing
7 also, too. So, this is like the plutonium-239 and
8 uranium-234 is about, what, 45 percent of the risk.
9 But the risk is less; so, it's 45 percent of
10 something that's less.

11 MR. BARGELT: Risk at this point in time
12 is one in a million, whereas at thirty years, it's
13 two risks in a million, cancer cases, excuse me.

14 MR. BROSCIOUS: It only takes a plutonium
15 particle the size of a grain of pollen to get in
16 and cause cancer. If you happen to be there and be
17 digging around in that spot at some future time,
18 whenever, within the next 24,000 years, that will
19 be your death warrant.

20 MR. STANISICH: I'd take exception to
21 that statement. A particle of plutonium, of pure
22 plutonium, is undefined. A piece of pollen is also
23 undefined. If you could say how many microcuries
24 or millicurries or whatever, then we could address
25 it. But on those terms, we really can't. A

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1 particle is, like I say, undefined. It really
2 doesn't mean anything. And I think that is really
3 overstating the true facts because --

4 MS. GREEN: Nick --

5 MR. STANISICH: -- we use standard EPA
6 and NCRP data to calculate these. These are
7 standards used in the nation around the world by --

8 UNIDENTIFIED PERSON: I guess --

9 MR. STANISICH: -- scientists
10 recognized -- recognized scientists in the field of
11 toxicology.

12 UNIDENTIFIED PERSON: I guess what you'll
13 have to recognize, then, is we're the people who
14 have watched the people die and are still watching
15 them die from your little particles. We have
16 watched cancer deaths from radionuclides; and I
17 guess we come at it from a little different
18 perspective than saying, for us, one in a million
19 wasn't good enough.

20 MR. STANISICH: And I can't -- I'm not an
21 epidemiologist, and I can't address which studies
22 you're referring to about deaths from cancer from
23 radionuclides.

24 UNIDENTIFIED PERSON: I'm using your own
25 statistics here. And I'm talking about what we

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1 have seen; what has been directly attributable.
2 And when you get down to that level, it doesn't
3 matter whether you're telling us it's one part in a
4 million or four parts in 10,000 million. We know
5 what that little particle did, that wasn't supposed
6 to do anything.

7 MR. STANISICH: I guess we're not saying
8 it didn't do anything. We are saying cancer --
9 incidents of cancer, not deaths. We're not talking
10 with immortality. If a million people were exposed
11 to this small area at ARA, they would have to be
12 exposed -- a million people would have to be
13 exposed. And then there would be a chance of one
14 excess cancer incident in a million.

15 UNIDENTIFIED PERSON: Isn't it amazing
16 that there's so many people sitting in this room,
17 then, that have seen it?

18 MR. BROSCIOUS: DOE's own studies on
19 beagle dogs determine that a particle -- I'm sorry,
20 that's the term they used -- a particle the size of
21 a grain of pollen that was administered to these
22 dogs, every one of them died, 100-percent death.

23 MR. STANISICH: I can't -- I can't
24 address that. I have no knowledge of that study.
25 I know they did a lot of studies with -- with

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1 beagles and plutonium, but I'm not familiar with
2 that.

3 MS. GREEN: Nick, I think all we can say
4 is that we calculated the risk based on established
5 EPA guidance using established procedures and using
6 the values that national and international
7 toxicologists and radio -- radio chemists have --
8 have published for that use.

9 MR. STOOPS: One last point to make is
10 that the ten-to-the-minus-four to
11 ten-to-the-minus-six excess incidents of cancer
12 range is published in the NCP, which is the
13 National Contingency Plan, which I believe was
14 revised in 1990. And that was submitted to the
15 public for comment. And it sets it out there for
16 approximately a year before that aspect of the rule
17 was promulgated.

18 MS. GREEN: Randy, do you want to
19 continue with your presentation?

20 MR. BARGELT: You've seen this slide
21 before. We took a look at the various exposure
22 pathways, which are inhalation, direct exposure to
23 ionizing radiation -- which Nick did say was the
24 one that we were most concerned about -- pleural
25 ingestion and skin contact.

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1 As I mentioned before, it has been closed
2 down. So, the amount of people that were exposed
3 to this on a daily basis are very few. They are
4 people from the Environmental Waste Relations
5 Department and the people that are decommissioning
6 the buildings that are likely to -- so, the
7 calculated risk here were two excess cancer cases
8 in 10 million. And that's currently today.

9 MR. BROSCIOUS: Do you want a citation on
10 that? The title of the report is Inhalation of
11 plutonium Oxide in Dogs, Pacific Northwest Bell,
12 Annual report, 1985. They all died.

13 MR. BARGELT: Future residential scenario
14 at 100 years. Notice the ARA facility has been
15 removed. The Chemical Evaporation Pond is pretty
16 much gone. And the excess cancer risk was one in
17 10 million at 100 years.

18 Another familiar slide showing you both
19 at 100 years and 30 years. The risks were within
20 the accepted range as put out by EPA. And for the
21 noncarcinogenic effects, it was .09, which is about
22 ten times less than what we expect to see the
23 adverse health effects on.

24 And, again, we recommend no action on
25 this because there is no unacceptable risk from

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1 this pond.

2 MS. GREEN: With that, I -- if we could
3 have any specific questions of clarification that
4 haven't already been asked on Randy's presentation,
5 and then after that, we'll open it up to just
6 general questions and answers on either the Chem
7 Pond or the Motor Pool Pond. And when there are no
8 longer any questions to answer, we'll begin
9 receiving formal public comment on both of these
10 two plans.

11 Do we have any -- any questions on either
12 the Motor Pool Pond or the Chemical Evaporation
13 Pond that haven't already been addressed?

14 Yes, ma'am?

15 MS. BENSEN: I have a question, and it's
16 probably the dumbest question anybody could ask.
17 Tell me what perched water means. I don't know
18 that term.

19 MR. JENSEN: That was the previous
20 discussion we had before you came. I'll do it
21 really quick, okay? And then I'll talk to you
22 afterwards, if you'd like.

23 Okay. Perched water is just -- it's
24 water -- what happened at TRA was water went into
25 several ponds. As it percolates through the

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1 subsurface, it encounters layers that are less
2 permeable than the ones it's going through; and so,
3 it slows it down. And when it hits those layers,
4 it causes it to mound up or perch. So, it's
5 perched water.

6 And there are two of them. There's a
7 shallow one at about 50 feet and then a larger one
8 at 150 feet.

9 MS. BENSEN: Can I ask another question
10 on that? Are there layers of water in there in the
11 meantime -- I mean, of normal natural occurring
12 water where this perched water is that would be
13 there if you didn't have perched water there?

14 MR. JENSEN: Okay. Only this one. This
15 is the Snake River Plain Aquifer. The top of the
16 aquifer is at 480 feet. And that's the one that's
17 the natural one. These are as a result of the
18 wastewater ponds.

19 MS. BENSEN: Thank you.

20 MR. JENSEN: And this is what it looks
21 like down there. This is the lava rock that the
22 water is in -- well, it's in cracks in this rock.

23 MS. GREEN: Any other questions
24 before -- yes, Chuck?

25 MR. BROSCIOUS: What are the EPA --

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1 what's the EPA's guidance on concentration limits
2 in terms of picocuries per gram for cesium and
3 strontium -- cesium-137 and strontium-90?

4 MR. JENSEN: Is that the drinking water
5 standards?

6 MR. BROSCIOUS: No. It would be soil.

7 MR. JENSEN: I don't think there are any.

8 MR. STANISICH: There aren't any.

9 MR. JENSEN: There aren't any soil
10 standards at all, are there?

11 MS. GREEN: That's essentially what the
12 risk assessment is used to determine.

13 MR. BROSCIOUS: So, it doesn't apply to
14 soil? It's strictly drinking water?

15 MR. JENSEN: And that's a federal
16 standard. And I believe -- has the State adopted
17 that as well?

18 MR. BROSCIOUS: How many grams are in a
19 liter?

20 MR. STOOPS: Grams of water in a liter of
21 water?

22 MR. BROSCIOUS: How many grams does a
23 liter of water weigh?

24 MR. STOOPS: A liter of water would
25 weight 1,000 grams at standard temperature and

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1 pressure.

2 MR. BROSCIOUS: And how -- well,
3 they -- the listing in the administrative record
4 has cesium-137 at 297 picocuries per gram.

5 MR. STOOPS: Right.

6 MR. BROSCIOUS: So, that's a pretty --
7 that's a pretty strong concentration if you compare
8 ground and water, even just in general --

9 MR. STOOPS: A picocurie is a ten to the
10 minus twelve, which is a trillion. It's a
11 trillionth of a gram.

12 MR. STANISICH: No. You're -- you're
13 mixing --

14 MR. BROSCIOUS: I realize that.

15 MR. STANISICH: -- activity per unit gram
16 to mass per unit gram.

17 MR. BROSCIOUS: Picocuries per gram.

18 MR. STANISICH: If the cesium-137
19 detected in the pond at 297 picocuries per gram was
20 translated to grams per gram, it would be 20 -- or
21 3.4 nanograms per kilogram or 3.4 parts per
22 trillion.

23 MR. FREDERICK: I think there's another
24 important consideration that needs to be made. You
25 cannot make a direct conclusion from a drinking

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1 water standard to a soil concentration because the
2 drinking water standard is based on two liters of
3 water per day. You got somebody drinking two
4 liters of water per day, and no one eats that much
5 dirt a day, at least no one that I know. So, to
6 use a health-based standard, you can't make a
7 comparison there.

8 MR. BROSCIOUS: I don't think it would be
9 hard for a kid to eat a gram -- I mean, that's a
10 real small amount.

11 MR. FREDERICK: It would take two
12 thousand grams of dirt to equal two liters of
13 water. That would be one of those big coke bottles
14 of dirt.

15 MS. GREEN: Every day.

16 MR. FREDERICK: Every day for 30 years.

17 MS. GREEN: Do we have any other
18 questions before we begin the session for receiving
19 formal oral comment on these two plans?

20 We'll let the court reporter change her
21 tape and paper out. And we'll begin the comment
22 session -- the formal comment session on these two
23 proposed plans, then, in just a minute.

24 (Whereupon, a short break was taken.)

25 MS. GREEN: This portion of the meeting

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1 is designed for you to provide your oral testimony
2 to DOE, EPA and the State regarding the Motor Pool
3 Pond and Chemical Evaporation Pond proposed plans.
4 Again, we'll listen to your comments, but will not
5 respond to them tonight except to seek any
6 clarification that may be needed in order to
7 evaluate and respond to the comments. They will be
8 responded to in a separate responsiveness summary
9 for each topic.

10 And for the record, please state your
11 name and spell it prior to providing your comments.
12 And please identify which plan you are commenting
13 on. You will -- you'll be provided five minutes
14 for each plan that you would like to comment on.

15 If you're not able to put all of your
16 comments into the five-minute period, please
17 remember that you're also welcome to submit
18 additional comments in writing by the close of the
19 comment period on August 5th. And, again, written
20 and oral comments receive equal consideration.

21 Okay. I'd like to see, then, a show of
22 hands for those who would like to make oral
23 comments on these plans and ask for a volunteer.

24 MS. MINEUR: My name is Lynn Mineur,
25 M-I-N-E-U-R. Comments are submitted on behalf of

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1 the League of Women Voters of Moscow.

2 And the Motor Pool Pond at the Central
3 Facilities Area, the League finds that the risk to
4 human health is too great to allow a decision of no
5 action at the central facility area Motor Pool
6 Pond.. The League finds that the model's
7 assumptions of exposure for both occupational and
8 residential use is to be understated. Yet, even
9 with these understated exposure rates, the risk to
10 human health is determined by the risk assessment
11 model summarized in table two of the June 26, 1992,
12 Dear Citizen letter exceeds one in one million
13 increased cancers in all four scenarios. The
14 League finds this health risk completely
15 unacceptable.

16 The League also finds the table presented
17 at tonight's public meeting does not substantially
18 reduce the risk in three of those four scenarios
19 and, therefore, does not alter the League's
20 position.

21 Only in those indications where the no
22 action alternative would result in a risk to human
23 health of one or less increased cancers per one
24 million people should the no action alternative be
25 considered. The League vigorously and strenuously

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1 objects to the no action alternative for the
2 Central Facilities Area Motor Pool Pond.

3 The League supports the option where
4 sediments are removed, containerized and stored in
5 a monitored retrievable site as required by RCRA.

6 The League formally requests that the
7 preliminary assessments of waste area group ten
8 begin immediately. The League finds that it is not
9 in the best interest of public health to allow
10 toxic, hazardous and radioactive materials to
11 continue to contaminate the Snake River Aquifer for
12 at least another seven years before the cumulative
13 consequences of these no action decisions will
14 begin to be evaluated.

15 Continuing evaluation of the cumulative
16 consequences of contamination from each subsequent
17 no action alternative will allow for the earliest
18 detection of an unacceptable risk. This
19 information should be included in the proposed
20 plans for each operable unit in each waste area
21 group. This procedure will allow the public to
22 comprehend and track the cumulative risk of the
23 clean-up program as it progresses rather than wait
24 until the end as it's now scheduled.

25 The League objects to the fragmentation

#T4-1A
ARA-09

#T4-1B
ARA-09

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1 of projects into unconnected operable units as
2 presented in the proposed plans described in the
3 June 26, 1992, Dear Citizen letter. The public
4 wants to see how each element fits together. If a
5 source of contamination or portion of a facility
6 will be considered under a separate plan or a
7 separate operable unit, then these relationships
8 must be spelled out in detail in the information
9 provided to the public. It is too unwieldy for the
10 public to chase down such vagaries as, quote,
11 sediments in these ponds and the retention basin
12 associated with the warm waste pond, as well as
13 past contamination of the Snake River Aquifer, are
14 being further evaluated under the agreement as
15 separate operable units. That was the June 26,
16 1992 Dear Citizen at four -- excuse me, at A-4.

17 The appropriate operable unit and time
18 frame for consideration must be identified in the
19 text or as a note.

20 Our comments are respectfully submitted,
21 Winifred Dixon, president and Lynn Mincur, Chair at
22 INEL Study Group.

23 Thank you.

24 MS. GREEN: Did you -- Lynn, did you have
25 comments on the Chemical Evaporation Pond, also?

#T4-1B
ARA-09

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1 MS. MINEUR: It's real short. The League
2 has no comments on this proposed portion of the
3 plan.

4 MS. GREEN: Did we need to -- since it's
5 separate, do we need to repeat her name and --

6 THE REPORTER: No.

7 MS. GREEN: Would anybody like to
8 volunteer to be the second commenter?

9 MS. McREYNOLDS: I'll go. Mary
10 McReynolds. Couple of comments I wanted to make
11 before we proceeded. When we were talking earlier
12 about numbers versus people, the gentleman in the
13 green shirt whose name tag I can't read from here,
14 had said that these numbers were out for public
15 comment and sat out there for public comment. I
16 would like for him to know that I've not always
17 been involved as heavily in INEL things as I am
18 presently. However, for a good many years, I have
19 been highly involved in the Idaho Nurse's
20 Association, honored by legislative committees as
21 well as being past district president, been on
22 several State committees.

23 One of the main concerns is listed and
24 our platform happens to be environmental health.
25 And had they been aware that this was out there for

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1 public comment, would have certainly alerted people
2 around there.

3 So, it's not because I wouldn't have done
4 it or I was -- I didn't know. So, I would suggest
5 that though those things were out there, the people
6 were not -- the information that they were there
7 was not readily available to people, particularly
8 if an organization such as the INA would miss it.

9 I want to come back to the idea, again,
10 of you guys speak numbers. We speak people. And a
11 risk of two in 100,000 is not acceptable for
12 residents. I would like to see one in 100,000 --
13 or not one in one hundred -- one in one million.

14 You have down there for a resident
15 outside would have 50 days a year outside. This is
16 after a hundred years. Being a home owner who
17 works in the yard, I can say I spend more than 58
18 hour -- days a year outside in my yard. So, the
19 risk is driven up by that. It's not being taken
20 into consideration if houses are built on this land
21 and those types of things have not been taken into
22 account.

23 I believe that this needs to be cleaned
24 up. I think you need -- I think the risk needs to
25 be driven down. I think you need to take the

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1 conservative. I think it needs to be one in one
2 million. And you guys need to clean it up,
3 containerize it and put it in retrievable storage.

4 The only -- I have two comments on the
5 Auxillary Reactor Area. One, I just didn't have
6 enough information to make any kind of a decision
7 on that whatsoever. I felt really lacking and
8 really vague in the information that we were given
9 because I have worked 13 out of the past 15 days --
10 and not at nuclear testing or anything having to
11 do with INEL. I haven't had a chance to go to the
12 administrative record. So, I can't back that up.
13 I would have liked more information.

14 The second thing I have to say is, again,
15 you guys are splitting up related operable units.
16 I want to state this again. Things are related are
17 not three separate facilities that have no action.
18 Things are related are systems who contribute to
19 one another.

20 When you are talking -- so, operable
21 units that would be related would be, This pond is
22 connected to the water. Underground is connected
23 to all of these other things which states in your
24 summary that these things, again, will be decided
25 under separable operable units. These things are

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1 systems that work together. You need to treat them
2 as systems that work together and to come, again,
3 before us and have this all divided up and expect
4 us, not to make the connections or hope -- maybe
5 you hope we don't make the connections -- I find it
6 unexcusable.

7 MS. GREEN: Could I clarify -- ask for a
8 clarification? Your first couple of statements,
9 your first few statements before, you mentioned the
10 Chemical Evaporation Pond. Were those specifically
11 regarding the Motor Pool Pond?

12 MS. McREYNOLDS: Yes, they were
13 specifically regarding the Motor Pool Pond.

14 MS. GREEN: Thank you.

15 MR. BROSCIOUS: Chuck Broschious,
16 B-R-O-S-C-I-O-U-S, Environmental Defense Agency.
17 Central Facilities Motor Pool Pond. Agency plans
18 to clean up the central facilities Motor Pool Pond
19 failed to accurately acknowledge the source of, nor
20 the quantities of significant radioactive
21 contamination in the pit.

22 DOE's plan states only that, quote, on
23 several occasions, vehicles and equipment with
24 small amounts of radioactive contamination were
25 decontaminated at the station. Concentrations of

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1 8.41 picocuries per liter of cesium-137,
2 americium-241 and plutonium-238 at 9.46 picocuries
3 per liter and plutonium-239 at 4.29 picocuries per
4 liter not adequately accounted for.

5 For those who are willing to read the
6 administrative record, EG & G documentation says
7 that, quote, long-lived fission products such as
8 cesium-137, cobalt-60 and strontium-90 may have
9 been added to the waste stream during
10 decontamination of vehicles. Citation of EG and
11 G-WM-9973 at thirteen. Also, potassium-40
12 concentrations of 8.73, lead-212 and radium-226 are
13 not acknowledged.

14 Tritium contamination under the CFA
15 ranges as high as 24,800 picocuries per liter,
16 which means additional contamination loading from
17 the Motor Pool Pond must not be allowed.

18 DOE's proposed plan also does not
19 accurately state the volatile organic ranges. The
20 Oak Ridge Survey sampling found 2-butanone at 190
21 micrograms per kilogram, trichloroethane at 25
22 micrograms per kilogram, toluene at 23 micrograms
23 per kilogram, methylene chloride at 460 micrograms
24 per kilogram, acetone at 85 micrograms per
25 kilogram, tetachloroethylene at 76 micrograms per

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1 kilogram, 4-methyl 2-pentanone at greater than
2 8,300 micrograms per kilogram. None of the organic
3 -- I'm sorry. Nine of the organic contaminants
4 exceed EPA CRQL criteria.

5 Over INEL's history, many accidents
6 and intentional releases have made transport of
7 contaminants off the site a significant concern.
8 Washing all vehicles has always been a standard
9 operating procedure. Therefore, it's not
10 surprising that these contaminants end up in the
11 Motor Pool Pond. Clearly, the installation of
12 motorized washing equipment made the process
13 easier.

14 Risk calculations for worker exposure
15 only allow for inhalation at 5 percent and direct
16 contact -- and direct contact at 1 percent. This
17 is grossly understated due to the close proximity
18 of the pond to the Central Facilities Area. Both
19 the State and the EPA review of the plan challenge
20 DOE statements that EPA risk assessment methodology
21 guidance was followed and point out that heavy
22 metals such as silver and selenium were not
23 acknowledged. Additionally, EPA challenges DOE's
24 dismissal of the soil to groundwater pathway for
25 contaminant migration.

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1 EPA also challenges the use of average
 2 values that is inconsistent with EPA guidance
 3 requiring use of a 95 percent upper level
 4 confidence limit. cesium is also not included in
 5 the exposure assessment nor were alpha and beta
 6 emitters even tested for at the waste pit.

7 The agency decision of no action is not
 8 supportable, noncompliant with ARAR's and
 9 therefore, unacceptable. The PCB aroclor-1260 in
 10 concentrations of 1,470 micrograms per kilogram
 11 alone would dictate enforceable remedial action of
 12 exhuming contaminates to prevent further migration
 13 to the aquifer.

14 The proposed no action is not acceptable
 15 and under no circumstances should the State or EPA
 16 allow DOE to walk away from the contamination at
 17 this site. Contamination must be fully exhumed and
 18 put into a RCRA fully compliant and permitted
 19 repository and/or mixed TRU waste repository.

20 Auxiliary Reactor Area Chemical
 21 Evaporation Pond. Once again, Department of Energy
 22 generates a no action proposal without any
 23 substantive information to support the decision.
 24 The Auxiliary Reactor Area Chemical Evaporation
 25 Area is actually an unlined percolation waste pit

#T4-2
 ARA-08

#T4-3
 ARA-02

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1 for chemicals and radionuclides. Sampling did not
 2 include beta-emitting radionuclides.

3 Alpha and gamma isotopes are listed
 4 without any quantitative contaminate values and
 5 drinking water standards upon which a reader could
 6 reasonably make an informed decision on the merits
 7 of the agency decision.

8 This chemical percolation pit is located
 9 at the ARA area one, which is the site of the
 10 infamous SL-1 reactor explosion which spewed out
 11 1,100 curies and killed three operators. The ARA
 12 has a long and sordid reactor destruct experimental
 13 history including power burst reactor, gas-cooled
 14 reactor experiment, mobile power plant number one,
 15 SPERT reactors one and two, fast spectrum
 16 refractory metals reactor, hot critical experiment,
 17 fast transient reactor and related support
 18 facilities.

19 In the plan narrative, DOE commits nearly
 20 all discussion to trivializing the problem and
 21 offering little or no substantive information. The
 22 ARA facilities have extensively contaminated the
 23 ground in the area. DOE expects the public to
 24 accept background samples collected 100 feet from
 25 the pond.

#T4-3
 ARA-02

#T4-4
 ARA-10

#T4-5
 ARA-10

#T4-6
 ARA-02

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1 Given ARA released 361,632 curies over
2 its history, this choice for background sampling is
3 ludicrous. Adding insult to injury, DOE
4 characterizes these background readings as quote,
5 unquote, naturally occurring.

6 The ARA lies immediately up gradient
7 of the Big Lost River. As previously cited, a
8 six-member groundwater study team commissioned by
9 EG & G, an INEL contractor, was canceled after its
10 preliminary results showed that contamination,
11 quote, could move from INEL to the Magic Valley
12 within months, closed quotes. Their findings
13 revealed the presence of lava tubes which move
14 water rapidly through the aquifer and exit at
15 Thousand Springs on the Snake River.

16 Other DOE studies of aquifer
17 contamination plume movement from ICPP to CFA
18 between 1953 to 1958 document a seven foot per day
19 or half mile per year. Contaminate travel time
20 from surface disposal to the aquifer is
21 approximately four to six weeks or ten feet per
22 day.

23 The fact is that the aquifer is not a
24 homogeneous geologic structure, but rather a very
25 heterogeneous mix of different strata. Therefore,

#T4-6
ARA-02

#T4-7
ARA-01

#T4-8
ARA-01

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1 no generalized characterization about water
2 movement within the aquifer is valid. The entire
3 volume of the Big Lost River literally disappears
4 into the porous Snake River Plain.

5 MS. GREEN: Did we have anybody else who
6 would like to provide oral comments on either of
7 these two proposed plans?

8 (No response made.)

9 If there are no other comments, before we
10 close the meeting, I'd like, once again, to remind
11 you that the comment period is open until August
12 5th. And please feel free to submit any additional
13 written comments on any of the three plans we've
14 discussed tonight, if you identify additional
15 comments that you haven't already submitted.

16 I'd like to thank you all for attending
17 and participating tonight and hope to see you at
18 our next public involvement meeting. Thank you and
19 good night.

20 (PROCEEDINGS ADJOURNED AT 9:55 P.M.)

21
22
23
24
25

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C E R T I F I C A T E

STATE OF IDAHO)
; ss.
County of Nez Perce)

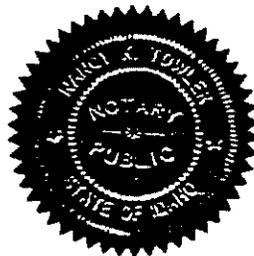
I, NANCY K. TOWLER, CSR, Freelance Court Reporter and Notary Public for the States of Idaho and Washington residing in Lewiston, Idaho, do hereby certify:

That I was duly authorized to and did report the public hearing in the above-entitled cause;

That the foregoing pages of this public hearing constitute a true and accurate transcription of my stenotype notes of the proceedings.

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

IN WITNESS WHEREOF, I have hereunto set my hand and seal on this 25th day of August, 1992.



Nancy K. Fowler
NANCY K. TOWLER, CSR
Freelance Court Reporter
Notary Public, States of
Idaho and Washington
Residing in Lewiston, Idaho
My Commission expires: 8/11/97

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WC-00301 (1)

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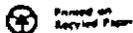


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Comments
on
Idaho National Engineering Laboratory
Test Reactor Area
Central Facilities Area
Auxiliary Reactor Area
Cleanup Proposals

Submitted
by
Chuck Broscius
on behalf of
Environmental Defense Institute
July 23, 1992

proltracfa.722



A. Test Reactor Area

The following comments address two proposed INEL Cleanup Plans for Test Reactor Area (TRA). The first Plan covers the contaminated "Perched Water" under the TRA (June 92). The second Plan covers cleanup of contaminants in the Warm Waste Pond Sediments at the TRA (July 91) and the Warm Waste Pond Record of Decision (12/3/91).

The proposals (hereinafter referred to jointly as the Plan) have significant deficiencies. These problem areas are the result of basic structural defects which include: 1.) Conflict of interest in DOE/INEL setting its own cleanup priority system; 2.) Lack of accountability and credibility in DOE/INEL managing its own cleanup program; 3.) Inadequate cleanup standards to protect future generations; 4.) Inadequate enforcement by the Environmental Protection Agency (EPA) and the State of Idaho; 5.) Segmented approach to cleanup frustrates a comprehensive assessment of the collective contamination being released by all the INEL waste sites.

The INEL Cleanup Inter-Agency Agreement between DOE, EPA, and Idaho, could have resolved many of the aforementioned structural defects. EPA and the State however did not demand adequate funding, enforcement authority nor control over the cleanup process. A detailed EDI analysis to the Agreement is available on request.

Early staff reports to the Atomic Energy Commission (AEC) in 1947 were very critical of disposing of radioactive waste at INEL over Idaho's sole source aquifer because of the inevitable ground water contamination. Yet the AEC (DOE's predecessor) and DOE ignored science and made political decisions - science be damned. This flawed decision making process continues today and must be changed. Unfortunately the Test Reactor Area (TRA) cleanup Plan is a continuation of this flawed process because DOE/INEL insists that the leach pond continue to be used until an alternate treatment facility is funded and built.

EDI concurs with Congressional Office of Technology Assessment's findings that significant fundamental policy initiatives are required - involving substituting independent, external regulation for the present DOE self-regulation over radioactive waste management. (OIA Brief 2/91)

1. TEST REACTOR AREA (TRA) BACKGROUND

DOE's characterization that INEL's, "primary missions are nuclear reactor technology and waste management" [Pl:81] is not accurate. US Representative Richard Stallings accurately characterized INEL's programs as 80% military. As one of two designated "Super-Sites" for DOE's Complex 21, INEL's mission

will be nearly exclusively nuclear weapons production and other military nuclear programs. The public deserves a more candid and accurate disclosure of INEL's mission.

INEL's background discussion also fails to mention that the Test Reactor Area (TRA) has forty-nine Solid Waste Management Units. These include leaching ponds, underground tanks, rubble piles, cooling towers, waste injection wells, french drains, and assorted spills where hazardous and mixed wastes exist. [33P # 72] A reader of INEL's Plan might be led to believe that the Warm Waste Pond and the contaminated Perched Water are the only problem area at TRA. Additionally, the pond has been in continuous use for 35 years. [D32/15-12111 # 33]

TRA's reactor fuel cooling canal at the Materials Test Reactor had a severe leak which was not drained and repaired until a decade after it was discovered. This leak allowed large quantities of contaminated coolant water to escape to the soil below the TRA, but has not been identified in the Cleanup Plan as a contamination source. The largest contributor to groundwater contamination under the TRA was the radioactive waste injection well which was not closed until 1984. Discontinuing the use of injection wells due to pressure from the State, increased volumes of contamination in the leach ponds proportionally.

The Test Reactor Area (TRA) leads all other INEL facility areas in radioactive solid waste disposal relative to curie content. DOE summary data between 1952 and 1981 cite 3,636,000 Ci. of solid waste disposed. [IP-1004-81] TRA supports the Advanced Test Reactor, Advanced Reactor Critical Facility Reactors, Hot Cell Facility, Nuclear Physics Research Program, Advanced Reactivity Measurement Facility, and Coupled Fast Reactivity Measurement Facility Reactors.

2. Test Reactor Area (TRA) Perched Water

TRA also leads the list of INEL facility areas for radioactive liquid waste discharges. Between 1952 and 1981 TRA released 50,840 Ci. to the soil. This figure does not include short-lived radioactivity with less than 2-3 day half-life. [Ibid. #4] DOE's "not action" decision at INEL's worst groundwater contamination area is a clear indication that there will be no remedial actions at other waste sites.

Idaho State University monitoring found TRA highest in tritium concentrations. The size of the contamination plume under TRA is larger than DOE acknowledges. Well No. 65 south of [and beyond acknowledged plume] TRA had the highest results ranging from 43,5000 to 48,200 picocuries per liter. [90 Ovars [p1422]]

The State challenges DOE's characterization of the size to the perched water contamination plumes because of the location

and depth of the monitoring wells. The State's "review strongly suggests that wells along the north and northeast margin of the network are too deep to intercept or represent water levels in the perched water zone." "That is, the perched water zone may extend farther to the north and northeast than previously recognized" by DOE. [! Overight!!]

TRA groundwater liquid samples taken by DOE in 1991 for gamma emitting radionuclides include the following concentrations expressed in pico curies per liter (pCi/L): [Administrative Record, Summary Table of Chemical and Radiological Analysis, Appendix G-4006405][Analytica-10-12782-100-615 to G-632]

Nuclide	Concentration	EPA 1976 Drinking Water Limit	Number of times over
Cobalt-58	601 pCi/L	?	
Cobalt-60	12,200,000	100 pCi/L	122,000
Zinc-65	105,000	?	
Cesium-134	62,400	?	
Cesium-137	21,000,000*	200	105,000
Europium-152	108,000	60	1,800
Europium-154	130,000	200	650
Europium-155	20,400	600	34
Americium-241	16,700	6.34	2,634
Manganese-54	336	?	
Chromium-51	2,540,000	6,000	423
Scandium-46	4,140	?	
Iron-59	2,600	?	
Zirconium-95	11,500	200	57
Niobium-95	12,000	?	
Ruthenium-103	3,970	1,000	3
Rhodium-106	4,980	?	
Silver-108	14,400	?	
Antimony-124	150	?	
Cerium-141	6,140	?	
Hafnium-175	3,500	?	
Hafnium-181	136,000	1,170	117
Tantalum-182	3,180	?	
Mercury-203	1,680	?	
Curium-244	160	?	
Plutonium-239	12	?	
Uranium-234	520	?	
Strontium-90	18,000	8	2,250
Tritium	3,940,000	20,000	197
	40,346,369		

Gross Curie Concentration of above list 40,346,369 pCi/L

* The current (EPA, 1976) allowable limit in drinking water for Cesium-137 is 200 pCi/L and Cobalt-60 is 100 pCi/L. TRA Cesium-137 and Cobalt-60 concentrations are respectively 105,000 and 122,000 times over the allowable drinking water limit.

TRA perched groundwater chemical contamination testing produced the following selected results: [Administrative Record, Analytica 19-12782-1]

Xylenes	31,000 ug/L(micrograms per liter)
Naphthalene	3,100 mg/L(milligrams per liter)
2-Methylnaphthalene	15,000 mg/L
Phenanthrene	3,300 mg/L

TRA's waste injection well (USGS-53) contributed 3.9 trillion gallons of contaminated liquid waste to the aquifer between 1964 and 1982. 31,131 pounds of hexavalent chromium was included in this waste volume. TRA's waste injection well (TRA-05) released 148,000 gal/day or a total of 220 million gallons. [Admin. Record, Appendix F M-2584-28]

3. TEST REACTOR AREA (TRA) WARM WASTE POND

INEL's disclosure that, "The Warm Waste Pond is currently used only for disposal of reactor cooling water containing low levels of radioactivity", raises these questions: 1) how low are low levels of radioactivity, and 2) why is the pond still in use in violation of Resource Conservation Recovery Act (RCRA)?

The "low levels of radioactivity" the Plan describes as currently going to the Warm Waste Pond are actually not so low. "The service waste activity is allowed to average no more than three times drinking water tolerance in any isotope with the exception of very short-lived ones like Iodine-131." [DOW-14532 # 49] Even this disclosure does not account for the perched water having concentrations such as cobalt-60 at 122,000 times the drinking water limit. [see previous TRM perched water listing]

TRA percolation ponds, which replaced the injection well, receive 33 million gal. per year. Between 1952 and 1974 these ponds received 41,049 Cl. liquid discharges, or 83% of INEL's total of 49,745 Cl. liquid discharges for the period. [EPA-1535611-109,150,111-61] The upper two feet of the warm waste pond still contain 4,225 pCi/g of Cesium-137, 75.10 pCi/g of Plutonium-239/240. [Summary Tables of chemical & Radiological Analysis & Appendix F(4-33)] The high volumes of water was due to the once through cooling for the reactors requiring dilution. This also accounts for the high chromium contamination in the groundwater because chromium was used to retard corrosion in the reactor cooling systems. The three reactors (MTR,ETR, and ATR) discharged 55,353 pounds of chromium(VI). TRA pond algae registered 100 mR/hr. Ducks (usually 25 at any one time) using the pond registered the following radionuclide concentrations. [EPA # 111-75-76]

<u>Nuclide</u>	<u>Concentration</u>	<u>Nuclide</u>	<u>Concentration</u>
Cesium-137	890 pCi/g	Cerium-141	390 pCi/g
Cobalt-60	540 "	Iodine-131	18 "
Zinc-65	1100 "		

DOE calculated that an individual eating a duck would receive 20 mRem to the thyroid and 25 mRem whole body exposure. [Ibid] State standard limit is 4 mRem/yr. Chromium released to TRA ponds was 500 ppb. The standard at the time was .05 ppb or 10,000 times over regulatory standards. [Ibid. #111-79]

Continued use of the Warm Waste Pond clearly demonstrates DOE's misguided priorities and total disregard for environmental degradation. DOE is continuing to add radioactive contaminants to a site which has been identified for cleanup for over five years. The continued use of the pond insures that water will continue leaching previous contaminants further down into the aquifer. Moreover the Environmental Protection Agency (EPA) and the State of Idaho are remiss in their respective enforcement responsibilities for not closing down the Test Reactor Area ponds. EPA and the State have full justification to declare these ponds RCRA hazardous mixed waste sites as the following paragraph illustrate.

"EPA is authorized [under RCRA] to issue a corrective action order, which can suspend or revoke the authority to operate an interim status Treatment/Storage/Disposal facility or to seek appropriate relief (including an injunction) from a US District Court. [CERCLA § 201] [also see RCRA Section 3034(e); 42 USC at 6924(e) (West Supp. 1990)]

"Over the past 5 years, DOE has gradually been required to acknowledge that cleanup of the Nuclear Weapons Complex [including INEL] is subject to regulation by EPA (or the States) to the extent that hazardous materials are involved or a site is placed on the Superfund's National Priority List (NPL). Until 1984, DOE claimed that it was exempted from regulation under hazardous waste laws such as RCRA because of its Atomic Energy Act authority relating to national security and sovereign immunity from State regulation. A 1984 Tennessee Federal court decision rejected this claim and ordered DOE to comply with all RCRA provisions." [CERCLA § 304] [Citing, Legal Environmental Assistance Foundation v. Ecol, 386 F. Supp. 1163 (E.D. Tenn. 1984)]

3. TEST REACTOR AREA (TRA) SUMMARY OF SITE RISKS

The Plan's listing of contaminants fails to list Iodine-129 and Plutonium-238, 239, and 240 which were found in TRA leach pond plankton in concentration ranges (CRs) from 40,000 to 400,000. Distribution coefficients for Pu isotopes in sediments ranged from 13,000 to 150,000. [DOE/70-12111 #39] Due to I-129's 17

million year half-life, and Plutonium's 24 thousand year half-life, these isotopes are considered permanent contaminants in the environment by EPA.

The Plan also fails to quantify the range of contamination in TRA perched water. EDI concurs with the State's criticism of DOE for using only the MEAN concentration levels. Readers of the Plan deserve more information than they "exceed federal safe drinking water standards" or a footnote stating a standard of 4 mrem/yr. The standard for Cesium-137 (not stated) is 200 pCi/L.

There is no justification for DOE to eliminate from consideration in the plan, radioactive isotopes which had half-lives of more than five years. This also holds true for the non-inclusion of Cesium (half-life of 30 yrs) in the exposure assessment. TRA lies immediately (less than 2 miles) up gradient to the Big Lost River. Considerable uncertainty exists as to contaminate transport time within the aquifer due to the existence of lava tubes etc. in a very non-homogeneous geology of the Snake River Plain Aquifer. Moreover, DOE's contention that "there is no current use of the perched water or contaminated Snake River Aquifer in the vicinity of TRA" and the decision to consider the potential use of the area for only a 125 years period, is unjustified and unacceptable. Drinking water wells for workers at the ICPP and Central Facilities Area are only 2-3 miles down gradient from TRA.

A six member ground water study team commissioned by EC&G, an INEL contractor, was canceled after its preliminary results showed that contamination "could move from INEL to the Magic Valley within months." (May, 1988) Their findings revealed the presence of lava tubes which move water rapidly through the aquifer and exit at Thousand Springs on the Snake River. Another DOE study of contamination plumes from ICPP to CPA between 1953 to 1958 document a seven foot/day or one-half mile/yr. (EISA-5316 #111-81) That means that TRA contamination could reach the Big Lost River in 2 years or less. The fact is that the aquifer is not a homogeneous geologic structure, but rather a very heterogeneous mix of different strata. Therefore no generalized characterization about water movement within the aquifer is valid. The entire volume of the Big Lost River literally disappears into the porous Snake River Plain.

The collective contaminate contribution to the aquifer from all INEL facilities must be immediately evaluated. Decisions based on each individual site are not assessing the total contaminate load on the aquifer. Therefore, a true comprehensive risk is not being assessed. Waste Area Group 10 is designed to cover the INEL site groundwater, but that investigation is not scheduled until 1999. (PP&E-57) In the mean time contaminants in the perched water under various facilities will migrate into the aquifer where no remediation options can be applied. No credible

justification can be made for delaying an immediate pump and treat program for these contaminated perched water zones while they are still accessible. With gross curie concentrations exceeding 40 million pico curies per liter in TRA's perched water zone, a "no action" will likely precede other sites with less contamination.

4. TRA RISK ASSESSMENT

Human health risk information appears not to consider the combined cancer risks for non-radionuclide and radionuclide from inhalation. Since the radionuclide component already "approaches the upper National Contingency Plan (NCP) limit" (Plu 83), the combined risks may push it over the limit.

"The carcinogenic risks due to the external exposure to radionuclides were found to be significantly above the recommended NCP target risk range." (ID16) This DOE statement, as with other vague un-quantified statements, deserves specific numbers attached to it due to their obvious significance. EPA's standards are nearly two decades old and do not reflect current knowledge about the health risks to exposure to low levels of radiation. Health researchers from all over the world have demonstrated in their studies how non-protective the current standards - particularly with respect to genetic damage. Therefore, the conservative 1 chance in a million in getting cancer must be used, not the 1 in 10,000.

Human health risks assessments additionally do not consider migratory water fowl using the TRA waste ponds. I-129 and other gamma-emitting nuclide in tissues of ducks from the Test Reactor Area (TRA) leaching ponds have been known by INEL at least since 1981. (Health Physics 40: 173-181) Other DOE studies than those preciously cited state that: "Consumption of a duck immediately after leaving the TRA waste ponds would result in the predicted dose equivalent of about 10 mrem to an off-site individual from routine INEL operations (DOE/ID-12082(B6))." (DOE-ID-12111(836)) DOE acknowledges I-129 concentration AVERAGES of .3 pCi/gm. (802835)

Despite the fact that DOE/INEL has known for a decade about water fowl being contaminated in their radioactive waste ponds, no public notice has ever been released. Plutonium-238, 239, and 240 concentrations in TRA leach ponds as previously cited has been studied at length in a 1987 INEL report. This report stated that, "The highest plutonium concentrations was found in net plankton. Plankton concentrations ratios ranged from 40,000 to 400,000 for the plutonium isotopes and varied with sampling dates. These values reflect to efficiency with which plutonium is taken up by plankton." (802/10-12111 839)

The above Plutonium figures are relevant when considering that the migratory water fowl are eating the plankton and moving

B

off-site, and potentially into the Idaho diet. Two other DOE sites - Savannah River and Oak Ridge have had problems containing radioactivity on site. According to the Office of Technology Assessment (OTA), INEL has not attempted extensive ecological site characterization. "Although selected studies have been done on effects with potential relevance to the cleanup, there appears to be no systematic attempt to inform the cleanup process through ecological studies at INEL. The routine monitoring program there, is designed primarily to determine radionuclide pathways to human receptors and includes very little biological monitoring. Routine contaminant-level monitoring in animals is limited to game animals obtained from road kills." [OTA # 135]

Since the soil ingestion assessment for "cesium approached the upper limit of the recommended NCP target risk range" [Plus #?] INEL must specify which "worst-case conditions" were used. Since, "It could take over 400 years for the cesium to naturally decay to an acceptable level", then cesium must be given appropriate consideration. [Plus #?]

DOE's statement that any wastes generated or isolated during re-mediation activities "will be properly disposed of" is not only inadequate, it is based on credibility that DOE no longer can claim. Therefore, a full discussion must describe the required "cradle to grave" waste process. "DOE's current decisions lack credibility because of past failures by DOE and its predecessor agencies to deal effectively with environmental contamination and to make full public disclosure regarding the contamination and its impacts." [OTA # 3-14]

The fact that DOE has known since 1980 that it was contaminating the environment and deliberately avoided compliance with environmental law, warrants challenges to its credibility. [IRA, Vers Waste Fed ADS (Hazardous Conditions and Incidents)] According to the Office of Technology Assessment of INEL, "Characterization work is proceeding at a slow pace and is probably limited by funding. Investigation and testing of more conventional stabilization and containment techniques could be pursued more aggressively." [OTA # 34]

The decision by the Agencies (DOE, ID, EPA) to do nothing on interim actions on the IRA perched water is an affront to common sense and demonstrates blatant disregard for Idaho's most valuable resource - groundwater. Contaminated water in the perched zones must be pumped and treated to minimize further migration into the rest of the aquifer. The federal government must never again be allowed to foul our waters and just walk away. Billions of dollars currently being channeled into nuclear weapons materials production would more than adequately fund environmental restoration such as a pump and treat. It is unconscionable for Idaho & EPA to approve such a position.

Environmental Defense Institute's proposed pump and treat immediate action is necessary because, "Contaminates may also form or absorb onto colloidal particles, which allows them to move with, or faster than the average groundwater flow. Flow can result from an apparently unrelated force, such as the flow of water and contaminants due to a thermal or electrical gradient instead of the expected hydraulic gradient. Chemical reactions and biotransformation may occur, possibly changing the toxicity or mobility of contaminants. Some contaminants dissolve and move with the water; some are in the gas phase; others are nonaqueous phase liquids; some are more dense than water and may move in a direction different from groundwater; others may be less dense than water and float on top of it." [EIA #36]

**5. TEST REACTOR AREA WARM WASTE POND
INTERIM ACTION
Record of Decision**

The TRA Warm Waste Pond Record of Decision (ROD) is deficient. The ROD does not include the immediate cessation of use of the TRA leach ponds. EDI supports immediate cessation of use of the leach ponds in combination with pumping contaminated perched water to a water treatment system for removal of ALL contaminants.

EDI supports the ROD's chemical extraction and physical separation of pond sediment contaminants. These separated wastes must be safely stored in a monitored, retrievable form. However, the remedy criteria for removal of sediments of 690 pCi/gm must be equal to or less than the State standard of 4 mRem/yr.

**6. TRA COMPLIANCE WITH APPLICABLE OR RELEVANT AND
APPROPRIATE REQUIREMENTS (ARAR's)**

EDI challenges the Plan's statement that, "The sediment is not hazardous waste as described in RCRA, based upon tests conducted in 1990." [Plus#7] Clearly the sediment is a hazardous mixed waste as defined by court challenges to DOE's obfuscation of RCRA definitions. DOE continues to circumvent RCRA requirements which specifically specify safe handling, treatment, disposal, and waste site closure standards. For instance, INEL's Radioactive Waste Management Complex (RWMC) is where radioactive and hazardous chemical wastes are continuing to be buried in unpermitted, unlined pits which would not even pass EPA's Subtitle D municipal garbage landfill standards.

The TRA pilot study goals state: "Minimize or eliminate any characteristic which makes the [warm waste pond] waste RCRA hazardous, including treatment if necessary". [RCDE#30] This is indisputable evidence that there are RCRA classified constituents in the pond, and DOE's goal is to avoid RCRA requirements. RCRA closure requirements are further circumvented by not provid-

ing a non-permeable cap on top of the pond after extraction operations. This is important to keep precipitation from leaching residual contaminants still suspended in the sub-soils.

The Plan brazenly proclaims - without protest from the State nor EPA - that, "the new lined evaporation pond must be operational before significant cleanup can begin on cells currently in use." This statement clearly and unequivocally identifies EPA and the State with complicity with DOE's highest priority being continued operation - not protection of human health and the environment.

"DOE's various priority systems have certain fundamental flaws and have yet to prove themselves useful in decision-making. The priority scheme used in the Five-Year Plan groups activities into four very broad categories. Most DOE activities fall into some portion of the first two categories primarily, ongoing activities..." "Yet, at present, the greatest uncertainty concerns the variables that should be given highest priority in these systems - reducing health and environmental risks." (OTA # 62-63)

The priority system developed by DOE's Office of Waste Operations provides the categories in descending order of importance for action and funding Category one DOE puts "Maintains ongoing activities". [DOE Waste Management Operations Priority System Fact Sheet, Spring 1991]

Once again, DOE's priority system reflects the same misguided emphasis on continuing "operation" and "maintaining ongoing activities" in priority number 1 over its legal obligations to comply with environmental regulations in priority number 3. INEL's current crisis can be attributed to its historic failure to emphasize environmental compliance.

Placing formal agreements between DOE and local, State and Federal agencies in priority 2 ahead of its requirements to comply with external environmental regulations in priority number 3 is inappropriate. These agreements could be less restrictive and less adequate to protect health, safety and the environment. For example, funding for a weapons production facility could have a higher priority than complying with standards for radionuclide emissions, depending on the provisions of a particular compliance agreement with a state entity.

Protection of the public, compliance with environmental regulation, and environmental restoration must be priority 1 PERIOD. Because of the inherent conflict of interest, DOE should not be allowed to form its own priority system. Moreover, due to the fact that other departments such as Defense, Interior, and Agriculture also have massive contaminated sites requiring clean-up, a standardized priority system needs to be implemented. The Environmental Protection Agency has been trying unsuccessfully

for several years to convince the Administration of this need. Public input and full public participation however must be included in developing any priority system.

Public confidence continues to be eroded by DOE's misguided priorities and its lack of commitment to meaningful environmental restoration and compliance with environmental regulation. DOE's credibility is so low and the inherent conflict of interest so great that another agency must be considered to undertake the massive cleanup - expected to exceed \$ 200 billion. Clearly, DOE can not be trusted to manage cleanup funding when it is diverting "cleanup" funding into nuclear weapons production programs.

7. TEST REACTOR AREA (TRA) CLEANUP COST

Congressional Office of Technology Assessment (OTA) recommended that Congress "authorize an institution other than DOE to regulate those aspects of radioactive waste management activities not subject to DOE authority, and over which no other agency has authority, in order to enhance the credibility and effectiveness of these programs." [OTA # 141]

"By limiting DOE self-regulation and providing appropriate independent regulation of radioactive waste management at the [DOE] Weapons Complex, Congress could provide a credible and effective mechanism for addressing the issues, problems, and prospective solutions related to the safe treatment, storage, and disposal of existing and future radioactive waste." [OTA # 142]

B. STANDARDS FOR DETERMINING "HOW CLEAN IS CLEAN"

Conscientious environmental restoration of the INEL site where massive quantities of radioactive and chemical wastes have been recklessly dumped will not occur unless clear quantitative environmental standards are established. "How clean is clean." The Environmental Protection Agency tried to promulgate standards for high level and transuranic radioactive wastes in 1985 which offered inadequate protection. These standards were challenged by the Natural Resources Defense Council and were overturned by the First District Court of Appeals in 1987. Draft standards released in July 1991 with promulgation slated for 1993 are even less restrictive than the 1976 standards, and no-doubt they will also not sustain another legal challenge. These trends are consistent with the Reagan-Bush Administration's attempts to get government off the backs of the polluters. The biggest polluters being federal government facilities.

Office of Technology Assessment report states that: "The existing Federal guidance for protection of the public against radiation is outdated, and the development of new guidance is uncertain." "It is uncertain when and whether EPA would revise

their standards to reflect: 1.) recent findings by the National Research Council's Committee on Biological Effects of Ionizing Radiation (BEIR V report) that the risks of low-level ionizing radiation are two to three times more serious than it previously anticipated and 2.) the draft recommendation by the International Commission on Radiological Protection that the current radiation limit for workers be reduced by 60 percent." [CII 14]

The Nuclear Regulatory Commission in 1990 adopted policy for radioactive waste below 10 millirem - declaring it "below regulatory concern" (BRC). According to this NRC policy, BRC waste can be disposed of like regular garbage without regard for its radioactivity. DOE wasted no time adopting the NRC's BRC standard because it allowed them to write off huge quantities of defense waste that might otherwise have been disposed of as radioactive waste. Due to an overwhelming public out-cry, the BRC classification has been temporarily put on hold by the NRC.

The federal government continues to violate its obligation to clean up its environmental disasters by setting standards which will minimize clean up costs - not maximize restoration. Risk minimization dictates that the establishment of environmental standards be guided by considerations of health impacts on current and future residents. DOE must assume that currently sparsely populated areas will not remain so. Declaring large areas of land as "nuclear sacrifice zones" into perpetuity is unacceptable - if not grossly unconscionable.

The National Academy of Sciences (NAS) offered standards in A Study of the Isolation System for Geologic Disposal of Radioactive Wastes. This study used risk based approach for standards setting. The NAS panel recommended that there be a limit on the dose to the maximally exposed individual at any future time from wastes buried in a repository. The NSA's risk based approach is the most sensible and scientifically supportable approach to standards. However the 10 millirem limit NSA recommended is far too high. Recent epidemiological studies are revealing that exposures at that level can cause serious health effects.

The public must be involved and able to fully participate in clean up standards. This issue must be specifically addressed and ample opportunity for public comment. The question of "How Clean is Clean" is a question that the public not government agencies must decide. Therefore, Congressional hearings are needed not only to address standards, but also the fundamental structural issues concerning the transfer of cleanup programs out of DOE and over to another agency or an Office of Technology Assessment (OTA) recommends a new independent external commission.

B. Central Facilities Area

Agency plans to cleanup the Central Facilities (CFA) Motor Pool Pond fail to accurately acknowledge the source of, nor the quantities of significant radioactive contamination in the pit. DOE's plan states only that: "On several occasions, vehicles and equipment with small amounts of radioactive contamination were decontaminated at the station." Concentrations of 8.41 pCi/l of Cesium-137; Americium-241 and Plutonium-238 at 9.46 pCi/l; and Plutonium-239 at 4.29 pCi/l are not adequately accounted for.

For those who are willing to read the administrative record, EG&G documentation says that: "long-lived fission products such as Cesium-137, cobalt-60, and Strontium-90 may have been added to the waste stream during decontamination of vehicles." [EIS-11-99/3/13] Also Potassium-40 concentrations of 8.73, Lead-212, and Radium-226 are not acknowledged. [EIS 872/36] Tritium contamination under CFA ranges as high as 24,800 pCi/l which means additional contamination loading from motor pool must not be allowed. [EIS 872/36]

DOE's proposed Plan also does not accurately state the volatile organic ranges. Oak Ridge Survey sampling found 2-butanone at 190 ug/kg; trichloroethane at 25 ug/kg; toluene at 23 ug/kg; methylene chloride at 460 ug/kg; acetone at 85 ug/kg; tetrachloroethylene at 75 ug/kg; and 4-methyl 2-pentanone at greater than 8,300 ug/kg. [Ibid. 04-6&11] Nine of the organic contaminants exceed EPA CRQL criteria. Over INEL's history, many accidents and intentional releases made transport of contaminants off the site of significant a concern. Washing all vehicles has always been standard operating procedure. Therefore, it is not surprising that those contaminants ended up in the Motor Pool Pond. Clearly, the installation of motorized washing equipment made the process faster.

Risk calculations for worker exposure only allow for inhalation at 5% and direct contact at 1%. This is grossly understated due to the close proximity of the pond to CFA. Both State and EPA review of the Plan challenge DOE statements that EPA risk assessment methodology guidance was followed and point out that heavy metals such as silver and selenium were not acknowledged. Additionally, EPA challenges DOE's dismissal of the soil to groundwater pathway for contaminate migration. EPA also challenges the use of average values that is inconsistent with EPA guidance requiring use of a 95% upper level confidence limit. Cesium is also not included in Exposure Assessment nor were alpha and beta emitters even tested for at the waste pit.

The agency decision of "No Action" is not supportable, non-compliant with ARAR's, and therefore, unacceptable. The PCB Aroclor-1260, in concentrations of 1,470 ug/kg, alone, would dictate enforceable remedial action of exhuming contaminants to prevent further migration to the aquifer.

C. Auxiliary Reactor Area

Chemical Evaporation Pond

Once again, DOE generates a "No Action" proposal without any substantive information to support the decision. The Auxiliary Reactor Area (ARA) Chemical Evaporation Pond is actually an unlined percolation waste pit for chemicals and radionuclides. Sampling did not include beta-emitting radionuclides. Alpha and gamma isotopes are listed without any quantitative contaminate values and drinking water standards upon which a reader could reasonably make an informed decision on the merits of the Agency decision.

#W1-1
ARA-08

#W1-2
ARA-02

This chemical percolation pit is located at ARA Area 1, which is the site of the infamous SL-1 reactor explosion which spewed 1,100 Ci out and killed three operators. The ARA has a long and sordid reactor destruct experimental history including Power Burst Reactor, Gas-Cooled Reactor Experiment, Mobil Power Plant #1, SPERT Reactors 1&2, Fast Spectrum Refractory Metals Reactor, Hot Critical Experiment, Fast Transient Reactor, and related support facilities.

#W1-3
ARA-10

In the Plan narrative, DOE commits nearly all discussion to trivializing the problem and offering little or no substantive information. The ARA facilities have extensively contaminated the ground in the area. DOE expects the public to accept background samples collected 100 feet from the pond. Given ARA released 361,632 curies over its history, this choice for background sampling is ludicrous. Adding insult to injury, DOE characterizes these background readings as "naturally occurring."

#W1-4
ARA-10

#W1-5
ARA-02

The ARA lies immediately up gradient of the Big Lost River. As previously cited, a six member ground water study team commissioned by EC&G, an INEL contractor, was canceled after its preliminary results showed that contamination "could move from INEL to the Magic Valley within months." [Idley, 1980] Their findings revealed the presence of lava tubes which move water rapidly through the aquifer and exit at Thousand Springs on the Snake River.

#W1-6
ARA-01

Other DOE studies of aquifer contamination plume movement from ICPP to CPA between 1953 to 1958 document a seven foot/day or one-half mile/yr. Contaminate travel time from surface disposal to the aquifer is approximately 4-6 weeks or 10 feet/day. [EEDA-53158(1)-(204)(11-81)] The fact is that the aquifer is not a homogenous geologic structure, but rather a very heterogeneous mix of different strata. Therefore no generalized characterization about water movement within the aquifer is valid. The entire volume of the Big Lost River literally disappears into the porous Snake River Plain.

#W1-7
ARA-01

The Administrative Record lists the following contaminants in the ARA chemical "pond":

Cesium-137	297	pCi/g
Cesium-134	11.4	pCi/g
Strontium-90	297	pCi/g
Cobalt-60	8.14	pCi/g
Plutonium-239	2.6	pCi/g
Uranium-234	1.6	pCi/g
Methyl Chloride	26	ug/kg
Barium	293	mg/kg

[RCR-PX-1000104-16 to 4-20]

The proposed "No Action" is not acceptable and under no circumstances should the State or EPA allow DOE to walk away from the contamination at this site. Contamination must be fully exhumed and put into a RCRA fully compliant and permitted repository and/or mixed TRU waste repository.

#W1-8
ARA-03

#W1-9
ARA-05

Bruce L. Schmalz

6445 Sidehill Lane
Idaho Falls, Idaho 83401

Phone (208) 522-7176
July 14, 1992

Mr. Jerry Lyle
DOE Idaho Falls Office
P.O. Box 2047
Idaho Falls, Idaho 83403-2047

RECEIVED
JUL 1 1992
ENVIRONMENTAL RESTORATION
PROGRAM

Re: Reclamation of pond areas at TRA-CFA-ARA

Dear Mr. Lyle:

This letter is to concur with the recommendations that no remedial action is justified.

#W2-1
ARA-07

In addition to the reasoning presented in your "solicitation for comments," efforts to clean up ground water at other locations in the country have not been technically or cost effective, and, in some cases necessary; for example, water to be used for industrial purposes need not meet drinking water purity. In the cases involved herewith, the contaminants concentrations are already below drinking water allowances. Use for any purpose is evidently not anticipated, therefore treatment action would seem foolish.

Interest was provoked by the contaminant concentrations in Table I pg. A-7. Contaminant concentrations are expected to diminish with depth. The concentrations reported for chromium and tritium shown in Columns B and C contradict this assumption.

I have some difficulty reconciling contamination concentrations in soil and water resulting from discharge between 1950 and 1970, which I reported in 1972 (IDO-100479) and those reported in Table I following another 20 years of waste water discharge.

With regard to the ponds at CFA and ARA, the "No Action" recommendation seems obvious, to say nothing about "the risk calculation" based on 250 day exposure, which in itself seems unrealistic.

#W2-2
ARA-07

The "No Action" recommendations based on factual logic (common sense) rather than response to political hysteria are gratifying.

#W2-3
ARA-07

Sincerely,


Bruce L. Schmalz

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JUL 2 1992

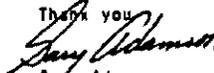
ENVIRONMENTAL RESTORATION
PROGRAM

Gary Adamson
EBB & S Idaho, Inc.
PO Box 1625
MS 7129
Idaho Falls, Id. 83415

Dear Mr. Lyle,

I am a systems engineer at TRA. Part of my responsibilities are our liquid waste discharges. I agree with DOE's no action recommendation for remediation of the perched water tables under TRA. I do feel, however, that TRA should recycle its cold (non-contaminated) waste water. I have submitted a construction project request to put a reverse osmosis unit in our cold waste system. If we put our contaminated effluent into an evaporation pond and recycle the cold effluent, 85-90% of discharge to the perched water tables will be eliminated. The goal is to dry up the perched water tables and trace contaminants in the soil column. This will reduce the risk to human health, esp. from tritium and cesium, to negligible much sooner.

I realize that future construction projects are not part of the proposed action plan, but recycling liquid waste would be a significant part of any remediation action.

Thank you

Gary Adamson



Snake River Alliance

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AUG 3 1992

ENVIRONMENTAL RESTORATION
PROGRAM

My name is Blan Holman. My address is 310 East Center, Pocatello. I am a native of Columbia, South Carolina, and the Savannah River Site is a familiar neighbor. For the past year, I have been with the Natural Resources Defense Council, where I spent a good deal of time focusing on the Idaho Chemical Processing Plant and its high-level waste. I am working with the Snake River Alliance this summer and am speaking this evening on behalf of its 1,200 individual, family, and business members.

Over three years ago, the Department of Energy promised to begin environmental restoration at the Idaho National Engineering Laboratory. Since that time, a steady stream of nuclear waste has continued to enter Idaho. Since that time, not a teaspoonful of INEL contamination has been "cleaned up."

In the meantime, government agencies have effectively undermined their promises for full public involvement in cleanup decisions.

Certainly, on the surface there appears to be a banquet of opportunities for public involvement. We have meetings--one right after the other--on the Community Relations Plan, proposed cleanup plans, the Site-Specific Plan. We even hear there are plans to start scoping for a site-wide environmental impact statement. There seems to be a whole lot of planning going on.

And there are agencies and departments within agencies eager to tell us everything they think we need to know about every single plan. Draft Records of Decision, of course, remain secret. Without prodding, the agencies wouldn't even tell us the plan for monitoring groundwater at the Test Reactor Area--125 years from now, even though that is the proposed plan.

But all these meetings are, in reality, somewhat confusing, laborious, and redundant; they will ultimately frustrate and exhaust the public. Whether intentional or not, this balkanized approach to public involvement serves mainly to dissipate public participation, consuming the time and energy of public interest groups that might otherwise be spent on more productive pursuits.

Why don't we regard these meetings as productive?

Blurred in the seeming abundance of opportunities is the fact that no process yet exists that allows citizens to participate or even be represented on the front end of the decisionmaking process. Agency officials devise and present "proposed solutions," the public comments on these proposals, and then the agencies decide what, if any, changes to proposed actions will be



taken in "response." While this process may occasionally-- somewhere on earth--lead to significant alterations in a plan, it effectively precludes the public from challenging the basic planning premises.

One such premise, set forth on page A-9 of the Perched Water Plan, is the notion that the Department of Energy will retain control over the Idaho National Engineering Laboratory for the next 125 years, 23 years longer than Idaho has existed as a state. Who has decided that the INEL will be there for 125 years? Can they guarantee it? Did they ask the people of Idaho?

I doubt it, but the people of Idaho might just see a pattern here. Does this projection mean that DOE will be maintaining control over high-level waste in Idaho until the year 2117? Does that constitute "interim storage"? Would that the DOE had taken such a long-range view when it put sodium-contaminated waste into single-walled tanks. Or maybe it did.

For cleanup to go properly, the people of Idaho need:

SUBSTANTIAL PROCESS REFORM

- (1) Cleanup decisions cannot be left to the bureaucrats and the technocrats alone. These problems are social, not just technical.
- (2) An Honest Commitment to Accountability to help restore citizen faith in the DOE. Citizen input should be welcomed and used, not tolerated then ignored.
- (3) Full Disclosure of the environmental and health concerns, risks, and hazards at the INEL.

A RATIONAL POLICY FOR ENVIRONMENTAL PROTECTION AT THE INEL
The current patchwork of INEL "cleanup" policies is woven by inter-agency politics and inevitably warped by the DOE efforts to retain functions related to nuclear weapons in Idaho. We believe an honest analysis of the environmental, health, and economic issues involved in cleanup should include the following:

- (1) No More Waste Should be Allowed Into Idaho.
- (2) On-Site Waste Production Should be Reduced.
- (3) On-Site Contamination Should be Handled Rationally.
 - a. Deal with Imminent Threats Immediately (HLW tanks)
 - b. Keep mobile waste from spreading
 - c. Use "interim actions" only if they reduce risk without significantly complicating future remediation
- (4) Determine Cleanup Standards Through Public Involvement.

1024 East Fifth St.
Moscow, ID 83843
July 24, 1992

RECEIVED
AUG 11 1992
ENVIRONMENTAL RESTORATION
PROGRAM

Jerry Lyle, Deputy Asst. Manager
Environmental Restoration and Waste Management
DOE-Idaho Field Office
Box 2047
Idaho Fall, ID 83403-2047

Dear Sir:

This letter is in response to the "Perched Water System beneath the Test Reactor Area" plan for INEL. I attended the public comment meeting held on Moscow on July 23, but was unprepared to respond at that time. Since then I have studied the documents provided. I respectfully request that you reject your plan of no action and proceed to develop a plan based on considerations I shall present below.

My comments shall be in three sections: 1) general concerns that your planning process has lost sight of the overall seriousness of the environmental pollution threat presented by INEL, 2) specific comments about your characterization of the site and the model used to derive the data upon which you base your risk assessments, and 3) suggestions for an action plan for the perched water system beneath the Test Reactor Area.

Section 1

First, let me say that I was quite surprised by the apparent philosophy of DOE, EPA, DEO and Dames and Moore in your approach to the situation at INEL. We are in the last decade of the twentieth century, the cold war is over, and the general public has major concerns about environmental pollution and wants to do something about it. Given what we've come to understand about the functioning of our environment and radionuclides and heavy metals as environmental toxins, INEL would never be located on the Eastern Snake River Plain in this day and age, even in the name of national security. From an environmental point of

view, it was a mistake to have located INEL on the Snake River Plain and now that we recognize it, we need to take all reasonable action to ameliorate and remediate the problems which it is causing.

Clearly, your philosophy and planning process were oriented to minimizing the recognition of potential pollution problems posed by INEL and the perched water system beneath the test reactor area. Your philosophy should have been one of open recognition of the threats posed by INEL, with its multitude of pollution sources, leading to a reasonable remediation plan for the perched water system beneath the test reactor area. The major issue is not the interpretation of selected data about the potential hazard of any given site at INEL - the major issue is that INEL poses a huge risk to our environment and should be managed to minimize the risk at any and all points.

Lest you have forgotten the overall characteristics of the INEL site, allow me to state some of the risks of the site that are obvious to everyone. Outside of a couple of active volcanic areas in Hawaii and the Aleutians, there is no major area in the U.S. or North America that is more geologically active than the Eastern Snake River Plain. Witness Craters of the Moon, just a few miles from INEL. Witness the most recent basalt flow on INEL, about 70,000 years old - just this morning in geologic time - and another could occur at any time. Witness the Challis earthquakes and the major earthquake zone just to the north of INEL with Idaho's highest peak being actively pushed up. Is this a setting in which we should minimize the potential threats of pollutants which will last longer than these geologic events have been occurring?

Next consider the fact that Eastern Snake River Plain is composed of a highly permeable bedrock and sediments. The permeability data being fed into the flow model notwithstanding, what other areas of the world do you know of where all the streams and rivers flowing out of a major mountain system simply sink into the ground - not evaporate, but drain into the lithology? Take a look at the basalt of the Craters of the Moon, or along the freeway between Blackfoot and Idaho Falls - do these jumbled, fractured masses look like they're very restrictive to water movement? The ponds at the Test Reactor Area were presumably constructed to take advantage of this characteristic before their potential threat to

the environment was recognized. It is only reasonable to conclude that pollutants introduced into the subsurface at INEL are going to continue to readily percolate downward with the water.

Finally, please consider the overall situation of the water associated with INEL -- water which has the potential to carry the pollutants out of the INEL and into our living environment. The situation of the Snake River Aquifer is fairly clear. If the pollutants are leached through the porous basalt and sediments into the aquifer, they are going to appear in our environment sooner or later, which given the persistence of the pollutants being produced at INEL, means we or our ancestors are going to have to deal with them.

But consider the sources of the water that might move the pollutants down to the aquifer. Even in a desert, some rainfall rapidly moves below the plant rooting zone and thenceforth moves down to the water table. But more importantly to most of the facilities in the western part of the INEL, they are located in the floodplain and sink areas of the Big and Little Lost Rivers. Drive through the INEL. Vast expanses of basalt flows lightly covered with loess deposits typify the area. Anyplace where there is sufficient soil to allow easy construction and access, the soil and sediments are in fact primarily water deposited -- and in most locations, there is some historical record of surface water being in the area. Geomorphologically, there is considerable evidence that major floods have occurred on the INEL since the last basalt flow -- enough to cover the Radioactive Waste Management Center with 50-60 feet of water.

I shall reserve a detailed discussion of water sources for deep percolation with respect to the problems of the Test Reactor Area characterization and modelling for the next section of this comment.

To summarize the first section of my comments, however, I have pointed out that the INEL is a very unfavorable site for the production and storage of long-lived environmental toxins and pollutants. The site is geologically unstable, is highly porous, feeds directly into a major aquifer, and has numerous potential sources of water to leach pollutants into the aquifer. These are generally recognized risks of the site. The governmental agencies and consultants

who prepared the plan for the perched water system beneath the test reactor area have not adequately considered these overall characteristics and risks of the INEL in conducting their analyses. They should recognize outright that the site is a high risk area for environmental pollutants. They should focus their planning on management and remediation that will minimize the potential for pollutants to be introduced to the environment. A "No Action" plan does not do this.

Section 2

Next, I shall make a few comments about the characterization of the Test Reactor Area site and the model used to develop the data for the risk assessment analyses of the perched water tables. I hope that you recognize and readily admit that the site characterization and modelling drives your plan. If they are in error or inadequate, the rest of the analyses for the plan become meaningless. I shall point out where they are inadequate and may be in error.

The most glaring oversight is the failure to consider the general site characteristics in your model development. In section 1, I have pointed out the general site characteristics which I think are important. You note some of them, but do not use them either in the model or the risk assessment. The most important site characteristics with regard to the model and analyses presented, surface and subsurface water as they impact the Test Reactor Area site, are not even discussed in any serious manner. In fact, rather than using the known site characteristics, (i.e., recent and strong geologic activity, high diversity and porosity of the resulting lithology, and geomorphic evidence of flooding) to temper the model results, the assumptions used to make the model work categorically deny the diversity and importance of these landscape features.

The model is driven by the water input boundary condition. No discussion nor analysis is presented of the fact that the Test Reactor Area is located on the floodplain of the Big Lost River, nor of the fact that there is considerable evidence of major catastrophic flooding in the area. (From my knowledge of the area, there is also the possibility for subsurface lateral water movement out of smaller drainages of the mountains to the northwest.) There is lots of room for discussion with regard to how these facts might impact on the potential risk of the pollutants being deposited at the site. However, given the fact that the potential water input

drives the model and everything else in this plan, all potential sources of water input should have been thoroughly discussed and weighted. They are not.

At the public session presented in Moscow, the officials present denied that the Test Reactor Area is on the floodplain of the Big Lost River, choosing the technicality of some "100 year floodplain boundary". Simple observation of an aerial photo of the site shows that at the very least two of the ponds at the site are within the meander scar system of the Big Lost River. A significant portion of the pollutant plume is under this same meander scar system. According to documents I have read, it is my understanding that virtually all the area within the meander scar system of the Big Lost River is considered the current flood plain of the river. You have disabused clearly observable features and data by claiming that this part of the meander scar system is above some hypothetical 100 year flood plain without any data to support your conclusions. Until you can cite unequivocal evidence for your position, which you do not in the documents, the evidence from photos of the flood plain clearly states the case that the Test Reactor Area ponds are on the current flood plain of the Big Lost River. The implications of this fact are immense for any analyses of the potential to leach the pollutants to the Snake River Aquifer.

Throughout the modelling effort, the assumption is made that water from the current course of the Big Lost River is not impacting or interacting in any way with the water in the deep perched water table. Yet in your own analyses, you explain some anomalous data in some of the test wells during years when the river was flowing as the result of water from the river keeping the perched water from flowing out in its normal path. You have no evidence that there is no interaction between percolating water from the river when it's in its channel (i.e., not even flooding) and water in the lower perched water table. In fact, in periods when the river flows, it is a more reasonable assumption that there will be interaction between the percolating river water and the lower perched water table given the proximity of the two bodies of water. The fact that the flow model chosen for this evaluation cannot deal with percolating water input from the river does not justify assuming that it will not happen. The reality which you have not dealt with in the plan is that there probably is going to be interaction between percolating water from the Big Lost River and the lower perched water table at several intervals over the next 125 years.

In addition to the two highly probable water input sources just noted, there are other potential input sources which need to be addressed in the plan. From a hydrogeologic point of view, you have not been comprehensive in dealing with potential inputs, in spite of the fact that the inputs drive the whole modelling effort and the subsequent hazard analyses. I shall not enumerate further potential inputs but note that your potential inputs are in error simply from the two discussed above and possibly from others.

Moving on to the water inputs you have chosen to recognize in your model – continued leaching from the ponds and surface rainfall – your results are simply unverifiable, and therefore in question, because you do not present the code by which the data are considered in the model. To conclude, as you have, that the model is verified because you are able to reproduce historical data within an order of magnitude is unacceptable. We need to see much more of how you were able to simulate this data. The groundwater modelling literature is replete with comments to the effect that one can reproduce data with virtually any model if enough parameters in a model are adjusted. My impression of the results of the modelling effort used in this plan is that it was simply a curve fitting exercise, with very little consideration given to known data about the area. We need to see much more of what the model contains and how the data were used before there can be much confidence in the model results.

What we're interested in at INEL is 1) whether the model reflects at a minimum what we know to be happening in the ground water movement, 2) whether, having used this information, we are able to reliably reproduce historical records, and 3) whether the model reflects reality well enough that we are comfortable projecting into the future. Since we don't see the computer code, or how and which data were used, we simply cannot know this from the results presented in the plan. However, there are some clear indications in what is presented that the model is not being used to meet 1 and 2 above, and probably is not appropriate for this effort. At the very least, you need an independent, professional analysis and verification of the groundwater modelling techniques used for this plan.

The question of water inputs discussed above is certainly one of the major concerns of the model. The model reproduces historical data which is largely driven by water input as

leachate from the ponds, which is presumably going to cease in the near future. What verification is there that the model is anywhere close to accurate for simple low level rainfall input, or high intensity rainfall event inputs, or flood event inputs, or interactions with river percolate once leachate from the ponds ceases to dominate? These in fact will be the major water input sources when pond leaching ceases. It comes back to my conclusion that the water input analysis for this modelling effort is completely inadequate.

For the model fitting effort, enough information is given in the plan to lead to serious questions about the procedures used. Apparently, one of the primary parameters varied to make the model fit were the Kd values for each of the geologic layers. Typically, Kd values are either measured in the field or laboratory on the geologic materials being modelled and these values are entered and maintained in the model. It is highly unusual to fit a model by picking and choosing which geologic layers should have a Kd value assigned to it or not, and even more unusual to vary these values to be able to fit a model curve to the data. Essentially, the modelers have assigned retention characteristics to the soil and rock materials to make the data fit with little consideration that chemical retention is an inherent property of the geologic material. Any historical data curve could be reproduced using this method but what proof is there that these juggled values really reflect the true Kd values of the different materials? Very little or none.

Finally, in spite of all its obvious defects and limitations, the model is used to churn out leaching and pollutant concentration values for 125 years into the future, and these data are used for the rest of the planning effort as though they are hard, real, measured data. In fact, they are highly speculative and unreliable and deserve to be treated with a great deal of reserve. At the very least, the modelled data should be used with variances or confidence intervals attached to them. As an example of what this modelled data might really mean, if the model functions within an order of magnitude reliability (as noted to indicate the "robustness" of the model), that implies that projections for leaching pollutants out of the lower perched water table over 125 years could occur within the range of 12.5 years to 1250 years. If all the projected solute leaching to the Snake River Aquifer occurs in 12.5 years, the site is in a very serious condition. Nothing in the modelling effort indicates that this is not a possibility. We all know that projections into the future have a degree of unreliability. It is

imperative that the modelled projections used in these analyses have a statistical reliability attached to them. Otherwise, they appear to represent little more than wishful thinking or scientific dishonesty, or both.

To summarize and conclude section 2, the characterization and modelling of groundwater and pollutant movement at the Test Reactor Site are inadequate, if not erroneous. Many of the reasonable sources of water to leach the pollutants into the Snake River Aquifer are not considered in the report. The model used to predict pollutant movement is not presented in any detail to allow analysis of its applicability or appropriateness. The little information that is presented on how the model was used indicate that it was used in a very narrow, 'curve-fitting' sense to historical pond leachate data at the Test Reactor Site with little regard for the known geologic and hydrologic characteristics of the Snake River Plain. The modelled data used to drive the rest of the planning effort are presented without any quantification of their reliability in a scientific sense.

In short, the authors of the plan have not convinced me that they know with any level of confidence what is going to happen over the next 125 years to pollutants in the perched water tables below the Test Reactor Site. I have not addressed all the problems I see in this modelling effort. At the very least, the site characterization and modelling for this plan should be reviewed by an independent team of professionals before the plan is adopted.

Section 3

Finally, the above discussion leads me to conclude that a very different approach needs to be taken to the plan for the perched water tables under the Test Reactor Area. The modelling effort presented in the plan documents requires too many simplifying assumptions that do not reflect the reality of the Snake River Plain. There can be no confidence at all in the modelled results of the potential effects on the Snake River Aquifer.

I recommend for the interim that action be taken at the Test Reactor Area which relates to the situation as we know it -- major environmental pollutants and toxins are situated in perched water tables which, unless action is taken, will leach into the Snake River Aquifer. There are a number of actions which should be taken immediately to minimize this risk.

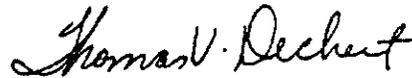
1. All leaching of polluted water through the ponds at the Test Reactor Area should be halted immediately. It is against the law to pollute the environment with toxic heavy metals and radionuclides. The DOE and INEL are not outside the law. They must stop dumping pollutants into the environment. There is no excuse for them to continue.
2. Every effort should be made to minimize or stop the downward flow of water to and through the perched water tables. This includes any further leaching of water through the ponds at the Test Reactor Area. An impermeable geofabric or layer of kaolinitic clay should be used to cover the whole of the perched water table area, including a reasonable margin beyond the area of the perched water table. All rain or flood water leaching down through the soil to the geofabric or clay layer should be drained away to the Big Lost River through a layer of coarse sand placed above the geofabric or clay. Perhaps even the river should be placed in an impermeable channel through the area in proximity to the perched water table.
3. Immediate action should be taken to begin massive pumping of the polluted water up out of the perched water table. The water should then be purified and the toxins transported and stored in a safe environment that can be monitored.
4. Future action may be required to pump liquid adsorbents into the perched water table area to try to remove more of the pollutants. Monitoring of the perched water table areas and better controlled modelling of the pollutant impacts will be required before this action should be taken.

These recommended actions will go a long ways towards addressing the problems in the Test Reactor Area as we understand them today. Monitoring and assessment of the cumulative effects of all the pollution being generated at INEL may lead to the requirement of more drastic measures in the future. We cannot afford to take "no action" based on the faulty analyses presented in the plan being presented by DOE. We owe it to ourselves, our children, and our world to be as conservative as possible in the preservation of our

environment. A plan of "no action" to reduce man-caused pollution of the Snake River Aquifer is simply unacceptable.

I respectfully submit the above comments for your consideration and request that you reject the plan as presented by DOE. If you would like further information from me, or clarification of my comments, please do not hesitate to contact me.

Sincerely



Thomas V. Dechert
1024 East Fifth
Moscow, Idaho 83843
Tel: 882-0972

cc: Mr. Wayne Pierre
Mr. Dean Nygard
Ms. Betty Benson
Mr. Chuck Broschous

League of Women Voters of Moscow

MOSCOW IDAHO 83843

Comments on the following
proposed clean up plans at the INEL:

- * Perched Water System beneath the Test Reactor Area;
 - * Motor Pool Pond at the Central Facilities Area; and
 - * Chemical Evaporation Pond at the Auxiliary Reactor Area
- submitted by the League of Women Voters of Moscow

July 23, 1992

The League of Women of Moscow is pleased to be able to present these comments in person at a public meeting held in northern Idaho. The League is reassured by our government's recognition of the public's right to the opportunity to participate in the clean up process regardless of whether the public chooses to exercise that right at any given time. The League continues to request language in the INEL Community Relations Plan that will guarantee that at least one public meeting on each cleanup project be held in the northern part of the state.

League members attended a technical briefing held in Moscow on July 14, and met on July 21, 1992 to prepare the following comments:

Perched Water System beneath the Test Reactor Area:
The League has grave reservations about the proposed decision to allow the contaminated sediments in the deep water perched pond to remain there. A risk assessment based on mean concentrations of contaminants is in danger of understating the risk. This is of special significance when the decision is to take No Action. The League requests that the risk assessment be repeated based on a model that considers the highest concentrations before a No Action alternative be found acceptable.

The League requests written identification of the specific operable units under which each of the five ponds and basins listed as sources of the shallow perched water system will be evaluated. This information was not provided in the June 26, 1992 Dear Citizen letter. The League also requests written assurance that the sediments in the shallow perched water system will be included in the RI/FS studies for each of these operable units.

THE LEAGUE OF WOMEN VOTERS OF MOSCOW SUPPORTS THE USE OF RECYCLED PAPER

The League objects to the continued use of the warm waste pond and the cold waste pond in light of the decision to allow the contaminants in the deep parched pond to remain as a source of contamination to the Snake River Aquifer.

Motor Pool Pond at the Central Facilities Area:

The League finds the risk to human health too great to allow a decision of No Action at the Central Facilities Area Motor Pool Pond. The League finds that the model's assumptions of exposure for both occupational and residential uses to be understated. Yet even with these understated exposure rates, the risk to human health as determined by the risk assessment model summarized in Table 2 of the June 26, 1992 Dear Citizen letter exceeds 1 in one million increased cancer deaths in all four scenarios. The League finds this health risk completely unacceptable. Only in those cases where the No Action alternative would result in a risk to human health of one increased cancer death per one million people should the No Action alternative be considered. The League vigorously and strenuously objects to the No Action alternative for the Central Facilities Area Motor Pool Pond. The League supports the option where sediments are removed, containerized and stored in a monitored retrievable site as required by RCRA.

Chemical Evaporation Pond at the Auxiliary Reactor Area:
The League has no comments on this proposed plan.

In closing, the League formally requests that preliminary assessments on Waste Area Group 10 begin immediately. The League finds that it is not in the best interest of public health to allow toxic, hazardous and radioactive materials to continue to contaminate the Snake River Aquifer for at least another seven years before the cumulative consequences of these No Action decisions will begin to be evaluated. Continuing evaluation of the cumulative consequences of contamination from each subsequent No Action alternative will allow for the earliest detection of an unacceptable risk. This information should be included in the proposed plans for every operable unit in each waste area group. This procedure will allow the public to comprehend and track the cumulative risk of the clean up program as it progresses.

The League objects to the fragmentation of projects into unconnected operable units as presented in the proposed plans described in the June 26, 1992 Dear Citizen letter. The public wants to see how each element fits together. If a source of contamination or portion of a facility will be considered under a separate plan or a separate operable unit than these relationships must be spelled out in detail in the information provided to the public. It is too unwieldy for

#W6-1
ARA-09

#W6-2
ARA-09

#W6-2
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the public to chase down such vagaries as " Sediments in these ponds, and the retention basin associated with the Warm Waste Pond, as well as past contamination of the Snake River Aquifer, are being further evaluated under the Agreement as separate operable units." (June 26, 1992, Dear Citizen, A-4) The appropriate operable unit and time frame for consideration must be identified in the text or as a note.

Respectfully Submitted,

Winifred Dixon

Winifred Dixon
President

Lynn Mineur

Lynn Mineur, Chair
INEL Study Group

* The League finds that the table presented at the public meeting does not substantially reduce the risk in 3 of the 4 scenarios, and therefore does not alter the League's ~~findings~~ position.

L. Mineur
7/23/92

Moscow, Idaho

July 23, 1992

We do not feel that "No remedial action" is the proper solution for dealing with the contamination in the Perched Water System beneath the Test Reactor Area, the Motor Pool Pond at the Central Facilities Area, and the Chemical Evaporation Pond at the Auxiliary Reactor Area.

#W7-1
ARA-08

Dividing the INEL into so many waste area groups, and these into operable units, may make it easier to manage the investigations, but all of this fragmentation does not provide us with the total picture. Adding all the "below-risk" factors of all the operable units of all the waste area groups together might result in a level which should demand remedial action. It seems very important to have a preliminary risk assessment of the whole area in order to come up with valid solutions.

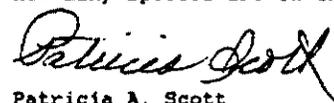
#W7-2
ARA-09

We wonder about the wisdom of averaging the concentrations of contaminants found in different areas. Using the highest concentrations would change the picture drastically. Revisions in what is considered safe concentrations for these contaminants have always been downward instead of upward, and it makes more sense to err on the conservative side if we cannot be sure just what is safe.

#W7-3
ARA-03

Finally, what are "safe concentrations" for all of the populations, flora and fauna, found in the INEL area. We do not believe that the "safe concentration" level for the harvester ant, for example, is known--yet the conclusion is made that no harm will occur to humans or the environment. Do you even know how many species are in the environment?

#W7-4
ARA-04



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Carolyn Hondo
Chairperson
Focus - Burley, Idaho
Carolyn Hondo

Balay
The plan's
INEL's background discussion also fails to mention that the Test Reactor Area (TRA) has forty-nine Solid Waste Management Units. These include leaching ponds, underground tanks, rubble piles, cooling towers, waste injection well, french drains, and assorted spills where hazardous and mixed wastes exist. [SSP @ 72] A reader of INEL's Plan might be led to believe that the Warm Waste Pond and the contaminated Perched Water are the only problem area at TRA. Additionally, the pond has been in continuous use for 35 years. [DOE/ID-12111 @ 39]

TRA's reactor fuel cooling canal at the Materials Test Reactor had a severe leak which was not drained and repaired until a decade after it was discovered. This leak allowed large quantities of contaminated coolant water to escape to the soil below the TRA, but has not been identified in the Cleanup Plan as a contamination source. The largest contributor to groundwater contamination under the TRA was the radioactive waste injection well which was not closed until 1984. Discontinuing the use of injection wells due to pressure from the State, volumes to the leach ponds increased proportionally.

great planning

@ TRA
The Test Reactor Area (TRA) leads all other INEL facility areas in radioactive solid waste disposal relative to curie content. DOE summary data between 1952 and 1981 cite 3,636,000 Ci. of solid waste disposed [ID-10054-81] TRA supports the Advanced Test Reactor, Advanced Reactor Critical Facility Reactors, Hot Cell Facility, Nuclear Physics Research Program, Advanced Reactivity Measurement Facility, and Coupled Fast Reactivity Measurement Facility Reactors.

TRA also leads the list of INEL facilities for radioactive liquid waste discharges (83%). Between 1952 and 1981 TRA released 50,840 Ci. to the soil. This figure does not include "short-lived radioactivity less than 2-3 day half-life. [Ibid. @14] The size of the contamination plume under TAN is larger than DOE acknowledges. Idaho State University monitoring found TRA highest in tritium concentrations. Well No. 65 south of [and beyond acknowledged plume] TRA had the highest results ranging from 43,5000 to 48,200 picocuries per liter. [90 Oversight@21]

We question
The State challenges DOE's characterization of the size to the perch water contamination plumes because of the location and depth of the monitoring wells. The State's review strongly suggests that wells along the north and northeast margin of the network are too deep to intercept or represent water levels in the deep perched water zone. "That is, the deep perched water zone may extend farther to the north and northeast than previously recognized" by DOE. [91 Oversight@31]

TRA percolation ponds, which replaced the injection well, receive 33 million gal. per year. Between 1952 and 1974 those ponds received 41,049 Ci. or 83% of INEL's total of 49,745 Ci. for the

"Over the past 5 years, DOE has gradually been required to acknowledge that cleanup of the Nuclear Weapons Complex (including INEL) is subject to regulation by EPA (or the States) to the extent that hazardous materials are involved or a site is placed on the Superfund's National Priority List (NPL). Until 1984, DOE claimed that it was exempted from regulation under hazardous waste laws such as RCRA because of its Atomic Energy Act authority relating to national security and sovereign immunity from State regulation. A 1984 Tennessee Federal court decision rejected this claim and ordered DOE to comply with all RCRA provisions." [OTA # 34] (citing, Legal Environmental Assistance Foundation v. Hodel, 586 F. Supp. 1163 (E.D. Tenn. 1984)]

3. TEST REACTOR AREA (TRA) SUMMARY OF SITE RISKS

The Plan's listing of contaminants fails to list Iodine-129 and Plutonium-238, 239, and 240 which were found in TRA leach pond ~~plutonium~~ in concentration ranges (CRs) from 40,000 to 400,000. Distribution coefficients for Pu isotopes in sediments ranged from 13,000 to 150,000. [DOE/ID-12111 #39] Due to I-129's 17 million year half-life, and Plutonium's 24 thousand year half-life, these isotopes are considered permanent contaminants in the environment by EPA.

The Plan also fails to quantify the range of contamination in TRA perched water. EDI concurs with the State's criticism of DOE for using only the MEAN concentration levels. Readers of the Plan deserve more information than that they "exceed federal safe drinking water standards" or a footnote stating a standard of 4 pCi/L. The standard for Cesium-137 (not stated) is 200 pCi/L. This places Cesium-137 1.315 times over the drinking water standard. Americium-241 is 140 times over; Strontium-90 is 570 times over; and Iritium is 92 times over the drinking water standard.

There is no justification for DOE to eliminate radioactive isotopes which had half-lives of more than five years, and non-inclusion of Cesium (half-life of 30 yrs) in the exposure assessment. TRA lies immediately (less than 2 miles) up gradient to the Big Lost River. Considerable uncertainty exists as to contaminate transport time within the aquifer due to the existence of lava tubes etc. in a very non-homogenous geology of the Snake River Plain Aquifer. Moreover, DOE's contention that "there is no current use of the perched water or contaminated Snake River Aquifer in the vicinity of TRA" and that only considered use of the area in 125 years is totally unjustified and unacceptable.

A six member ground water study team commissioned by EG&G, an INEL contractor, was canceled after its preliminary results showed that contamination "could move from INEL to the Magic Valley within months." [Aley, 1980] Their findings revealed the presence of lava tubes which move water rapidly through the aquifer and exit at Thousand Springs on the Snake River. Another DOE study of contam-

ination plumes from ICPP to CFA between 1953 to 1958 document a seven foot/day or one-half mile/yr. [ERDA-5316 @111-81] That means that TRA contamination could reach the Big Lost River in 2 years or less. The fact is that the aquifer is not a homogenous geologic structure, but rather a very heterogeneous mix of different strata. Therefore no generalized characterization about water movement within the aquifer is valid. The entire volume of the Big Lost River literally disappears into the porous Snake River Plain.

4. TRA RISK ASSESSMENT

Human health risk information appears not to consider the combined cancer risks for non-radionuclide and radionuclide from inhalation. Since the radionuclide component already "approaches the upper National Contingency Plan (NCP) limit"[Plan #3], the combined risks may push it over the limit.

* "The carcinogenic risks due to the external exposure to radionuclides were found to be significantly above the recommended NCP target risk range." [Ibid] This statement, as with other vague unquantified statements, deserves specific numbers attached to it due to their obvious significance. EPA's standards are nearly two decades old and do not reflect current knowledge about the health risks to exposure to low levels of radiation. Therefore, the conservative 1 chance in 10,000 chance in getting cancer must be used, not the 1 in a million.

* Human health risks assessment additionally do not consider migratory water fowl using the TRA waste ponds. I-129 and other gamma-emitting nuclide in tissues of ducks from the Test Reactor Area (TRA) leaching ponds have been known by INEL at least since 1981. [Health Physics 40: 173-181] "Consumption of a duck immediately after leaving the TRA waste ponds would result in the predicted dose equivalent of about 10 mrem to an off-site individual from routine INEL operations (DOE/ID-12082(86))." [DOE-ID-12111@36] DOE acknowledges I-129 concentration AVERAGES of .3 pCi/gm. [ROD#35]

Despite the fact that DOE/INEL has known for a decade about water fowl being contaminated in their radioactive waste ponds, no public notice has ever been released. "DOE has historically avoided public notification of releases from the weapons plants and their possible health effects. This practice has created substantial public distrust of DOE's methods and motivation." [OTA @ 5-9]

* Plutonium-238, 239, and 240 concentrations in TRA leach ponds as previously cited has been studied at length in a 1987 INEL report. This report stated that, "The highest plutonium concentrations was found in net plankton. Plankton concentrations ratios ranged from 40,000 to 400,000 for the plutonium isotopes and varied with sampling dates. These values reflect to efficiency with which plutonium is taken up by plankton." [DOE/ID-12111 @39]

[Handwritten star] The ~~above~~ Plutonium figures are relevant when considering that the migratory water fowl are eating the plankton and moving off-site, and potentially into Idahoan's diet. Two other DOE sites - Savannah River and Oak Ridge have had problems containing radioactivity on site.

According to the Office of Technology Assessment (OTA), INEL has not attempted extensive ecological site characterization. "Although selected studies have been done on effects with potential relevance to the cleanup, there appears to be no systematic attempt to inform the cleanup process through ecological studies at INEL. The routine monitoring program there, is designed primarily to determine radionuclide pathways to human receptors and includes very little biological monitoring. Routine contaminant-level monitoring in animals is limited to game animals obtained from road kills." [OTA @ 205]

Since the soil ingestion assessment for "cesium approached the upper limit of the recommended NCP target risk range" [Plan @ 3] INEL must specify which "worst-case conditions" were used. Was it a hot, dry, day, down-wind? "It could take over 400 years for the cesium to naturally decay to an acceptable level." [Plan @ 7]

~~DOE's statement that any wastes generated or isolated during re-mediation activities "will be properly disposed of" is not only inadequate, it is based on credibility that DOE no longer can claim. Therefore a full discussion must describe the required "cradle to grave" waste process. "DOE's current decisions lack credibility because of past failures by DOE and its predecessor agencies to deal effectively with environmental contamination and to make full public disclosure regarding the contamination and its impacts." [OTA @ S-14]~~

The fact that DOE has known for decades that it was contaminating the environment and deliberately avoided compliance with environmental law, warrants challenges to its credibility. According to the Office of Technology Assessment of INEL, "Characterization work is proceeding at a slow pace and is probably limited by funding. Investigation and testing of more conventional stabilization and containment techniques could be pursued more aggressively." [OTA @ 34]

[Handwritten star] ~~The decision by the Agencies (DOE, ID, EPA) to do nothing on interim actions on the TRA perched water is an affront to common sense and demonstrates blatant disregard for Idaho's most valuable resource - groundwater. Contaminated water in the perched zones must be pumped and treated to minimize further migration into the rest of the aquifer. The federal government must never again be allowed to foul our waters and just walk away. Moneys currently being channeled into nuclear materials production would more than adequately fund environmental restoration such as a pump and treat. It is unconscionable for Idaho & EPA to approve such a position.~~

** The ROD does not include the immediate decision of use of the TRA leak ponds.*

not include
stop

League of Women Voters of Moscow

MOSCOW IDAHO 83843
514 East Norton Street

July 24, 1992

Dean Nygard, Acting Federal Facilities Program Manager
Idaho Division of Environmental Quality
1410 N. Hilton
Boise, Idaho 83720-9000

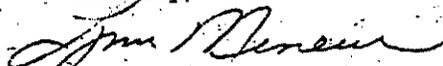
Subject: Request for an extension of the comment period on
the Proposed Plan for the Motor Pool Pond at the
Central Facilities Area; and

Request that the public be notified of the error
in the reported risk assessment data in the June
26, 1992 Dear Citizen letter

Dear Mr. Nygard:

Please accept this letter as an official request for a
thirty (30) day extension of the comment period on the
Proposed Plan for the Motor Pool Pond at the Central
Facilities Area. This time extension is requested in order
for the three agencies to notify the public of a substantial
error in the reported risk assessment summary data in Table
2 of the June 26, 1992 Dear Citizen letter. This error came
to light at the public meeting held in Moscow on July 23.
To our knowledge, those members of the public who were not
in attendance at that meeting have no way of knowing the
information on which they are making their comments is in
error. Therefore, the League also requests that the public
be notified of the error and provided with the correct data.

Sincerely,



Lynn Mineur
Chair, LNVW INEL Study Group

copy: Winifred Dixon, President

INDEX BY COMMENT SUMMARY AND RESPONSE NUMBER

Category	Name	Page	Comment#
ARA-01	Chuck Broschious	383	T4-7
ARA-01	Chuck Broschious	383	T4-8
ARA-01	Chuck Broschious	384	T4-8
ARA-01	Chuck Broschious	400	W1-6
ARA-01	Chuck Broschious	400	W1-7
ARA-02	Chuck Broschious	381	T4-3
ARA-02	Chuck Broschious	382	T4-3
ARA-02	Chuck Broschious	382	T4-6
ARA-02	Chuck Broschious	383	T4-6
ARA-02	Chuck Broschious	400	W1-2
ARA-02	Chuck Broschious	400	W1-5
ARA-03	Chuck Broschious	401	W1-8
ARA-03	Patricia and Donald Scott	419	W7-3
ARA-04	Patricia and Donald Scott	419	W7-4
ARA-05	Chuck Broschious	401	W1-9
ARA-06	Michael J. Ushman	233	T3-1
ARA-07	John Horan	77	T1-1
ARA-07	John Horan	78	T1-1
ARA-07	Bruce Schmalz	402	W2-1
ARA-07	Bruce Schmalz	402	W2-2
ARA-07	Bruce Schmalz	402	W2-3
ARA-07	John E. Tanner	105	T1-3
ARA-08	Chuck Broschious	381	T4-2
ARA-08	Chuck Broschious	400	W1-1
ARA-08	Dennis Donnelly	105	T1-2
ARA-08	Patricia and Donald Scott	322	T4-1
ARA-08	Patricia and Donald Scott	419	W7-1
ARA-09	Lynn Mineur	373	T4-1A
ARA-09	Lynn Mineur	373	T4-1B
ARA-09	Lynn Mineur	374	T4-1B
ARA-09	Lynn Mineur	417	W6-1
ARA-09	Lynn Mineur	417	W6-2
ARA-09	Lynn Mineur	418	W6-2
ARA-09	Patricia and Donald Scott	419	W7-2
ARA-10	Chuck Broschious	382	T4-4
ARA-10	Chuck Broschious	382	T4-5
ARA-10	Chuck Broschious	400	W1-3
ARA-10	Chuck Broschious	400	W1-4

INDEX BY COMMENTOR NAME AND RESPONSE NUMBER

Name	Category	Comment#	Page
Chuck Broschious	ARA-01	T4-7	383
Chuck Broschious	ARA-01	T4-8	383
Chuck Broschious	ARA-01	T4-8	384
Chuck Broschious	ARA-01	W1-6	400
Chuck Broschious	ARA-01	W1-7	400
Chuck Broschious	ARA-02	T4-3	381
Chuck Broschious	ARA-02	T4-3	382
Chuck Broschious	ARA-02	T4-6	382
Chuck Broschious	ARA-02	T4-6	383
Chuck Broschious	ARA-02	W1-2	400
Chuck Broschious	ARA-02	W1-5	400
Chuck Broschious	ARA-03	W1-8	401
Chuck Broschious	ARA-05	W1-9	401
Chuck Broschious	ARA-08	T4-2	381
Chuck Broschious	ARA-08	W1-1	400
Chuck Broschious	ARA-10	T4-4	382
Chuck Broschious	ARA-10	T4-5	382
Chuck Broschious	ARA-10	W1-3	400
Chuck Broschious	ARA-10	W1-4	400
Dennis Donnelly	ARA-08	T1-2	105
John Horan	ARA-07	T1-1	77
John Horan	ARA-07	T1-1	78
Lynn Mineur	ARA-09	T4-1A	373
Lynn Mineur	ARA-09	T4-1B	373
Lynn Mineur	ARA-09	T4-1B	374
Lynn Mineur	ARA-09	W6-1	417
Lynn Mineur	ARA-09	W6-2	417
Lynn Mineur	ARA-09	W6-2	418
Bruce Schmalz	ARA-07	W2-1	402
Bruce Schmalz	ARA-07	W2-2	402
Bruce Schmalz	ARA-07	W2-3	402
Patricia and Donald Scott	ARA-03	W7-3	419
Patricia and Donald Scott	ARA-04	W7-4	419
Patricia and Donald Scott	ARA-08	T4-1	322
Patricia and Donald Scott	ARA-08	W7-1	419
Patricia and Donald Scott	ARA-09	W7-2	419
John E. Tanner	ARA-07	T1-3	105
Michael J. Ushman	ARA-06	T3-1	233

INDEX BY CATEGORY

Category	Page	Comment#	Name
ARA-01	383	T4-7	Chuck Broschious
ARA-01	383	T4-8	Chuck Broschious
ARA-01	384	T4-8	Chuck Broschious
ARA-01	400	W1-6	Chuck Broschious
ARA-01	400	W1-7	Chuck Broschious
ARA-02	381	T4-3	Chuck Broschious
ARA-02	382	T4-3	Chuck Broschious
ARA-02	382	T4-6	Chuck Broschious
ARA-02	383	T4-6	Chuck Broschious
ARA-02	400	W1-2	Chuck Broschious
ARA-02	400	W1-5	Chuck Broschious
ARA-03	401	W1-8	Chuck Broschious
ARA-03	419	W7-3	Patricia and Donald Scott
ARA-04	419	W7-4	Patricia and Donald Scott
ARA-05	401	W1-9	Chuck Broschious
ARA-06	233	T3-1	Michael J. Ushman
ARA-07	77	T1-1	John Horan
ARA-07	78	T1-1	John Horan
ARA-07	105	T1-3	John E. Tanner
ARA-07	402	W2-1	Bruce Schmalz
ARA-07	402	W2-2	Bruce Schmalz
ARA-07	402	W2-3	Bruce Schmalz
ARA-08	105	T1-2	Dennis Donnelly
ARA-08	322	T4-1	Patricia and Donald Scott
ARA-08	381	T4-2	Chuck Broschious
ARA-08	400	W1-1	Chuck Broschious
ARA-08	419	W7-1	Patricia and Donald Scott
ARA-09	373	T4-1A	Lynn Mineur
ARA-09	373	T4-1B	Lynn Mineur
ARA-09	374	T4-1B	Lynn Mineur
ARA-09	417	W6-1	Lynn Mineur
ARA-09	417	W6-2	Lynn Mineur
ARA-09	418	W6-2	Lynn Mineur
ARA-09	419	W7-2	Patricia and Donald Scott
ARA-10	382	T4-4	Chuck Broschious
ARA-10	382	T4-5	Chuck Broschious
ARA-10	400	W1-3	Chuck Broschious
ARA-10	400	W1-4	Chuck Broschious

INDEX BY COMMENTOR NAME

Name	Comment#	Page	Category
Chuck Broschious	T4-2	381	ARA-08
Chuck Broschious	T4-3	381	ARA-02
Chuck Broschious	T4-3	382	ARA-02
Chuck Broschious	T4-4	382	ARA-10
Chuck Broschious	T4-5	382	ARA-10
Chuck Broschious	T4-6	382	ARA-02
Chuck Broschious	T4-6	383	ARA-02
Chuck Broschious	T4-7	383	ARA-01
Chuck Broschious	T4-8	383	ARA-01
Chuck Broschious	T4-8	384	ARA-01
Chuck Broschious	W1-1	400	ARA-08
Chuck Broschious	W1-2	400	ARA-02
Chuck Broschious	W1-3	400	ARA-10
Chuck Broschious	W1-4	400	ARA-10
Chuck Broschious	W1-5	400	ARA-02
Chuck Broschious	W1-6	400	ARA-01
Chuck Broschious	W1-7	400	ARA-01
Chuck Broschious	W1-8	401	ARA-03
Chuck Broschious	W1-9	401	ARA-05
Dennis Donnelly	T1-2	105	ARA-08
John Horan	T1-1	77	ARA-07
John Horan	T1-1	78	ARA-07
Lynn Mineur	T4-1A	373	ARA-09
Lynn Mineur	T4-1B	373	ARA-09
Lynn Mineur	T4-1B	374	ARA-09
Lynn Mineur	W6-1	417	ARA-09
Lynn Mineur	W6-2	417	ARA-09
Lynn Mineur	W6-2	418	ARA-09
Bruce Schmalz	W2-1	402	ARA-07
Bruce Schmalz	W2-2	402	ARA-07
Bruce Schmalz	W2-3	402	ARA-07
Patricia and Donald Scott	T4-1	322	ARA-08
Patricia and Donald Scott	W7-1	419	ARA-08
Patricia and Donald Scott	W7-2	419	ARA-09
Patricia and Donald Scott	W7-3	419	ARA-03
Patricia and Donald Scott	W7-4	419	ARA-04
John E. Tanner	T1-3	105	ARA-07
Michael J. Ushman	T3-1	233	ARA-06

INDEX BY COMMENT CODE NUMBER

Comment#	Page	Category	Name
T1-1	77	ARA-07	John Horan
T1-1	78	ARA-07	John Horan
T1-2	105	ARA-08	Dennis Donnelly
T1-3	105	ARA-07	John E. Tanner
T3-1	233	ARA-06	Michael J. Ushman
T4-1	322	ARA-08	Patricia and Donald Scott
T4-2	381	ARA-08	Chuck Broscious
T4-3	381	ARA-02	Chuck Broscious
T4-3	382	ARA-02	Chuck Broscious
T4-4	382	ARA-10	Chuck Broscious
T4-5	382	ARA-10	Chuck Broscious
T4-6	382	ARA-02	Chuck Broscious
T4-6	383	ARA-02	Chuck Broscious
T4-7	383	ARA-01	Chuck Broscious
T4-8	383	ARA-01	Chuck Broscious
T4-8	384	ARA-01	Chuck Broscious
T4-1A	373	ARA-09	Lynn Mineur
T4-1B	373	ARA-09	Lynn Mineur
T4-1B	374	ARA-09	Lynn Mineur
W1-1	400	ARA-08	Chuck Broscious
W1-2	400	ARA-02	Chuck Broscious
W1-3	400	ARA-10	Chuck Broscious
W1-4	400	ARA-10	Chuck Broscious
W1-5	400	ARA-02	Chuck Broscious
W1-6	400	ARA-01	Chuck Broscious
W1-7	400	ARA-01	Chuck Broscious
W1-8	401	ARA-03	Chuck Broscious
W1-9	401	ARA-05	Chuck Broscious
W2-1	402	ARA-07	Bruce Schmalz
W2-2	402	ARA-07	Bruce Schmalz
W2-3	402	ARA-07	Bruce Schmalz
W6-1	417	ARA-09	Lynn Mineur
W6-2	417	ARA-09	Lynn Mineur
W6-2	418	ARA-09	Lynn Mineur
W7-1	419	ARA-08	Patricia and Donald Scott
W7-2	419	ARA-09	Patricia and Donald Scott
W7-3	419	ARA-03	Patricia and Donald Scott
W7-4	419	ARA-04	Patricia and Donald Scott