ADVANCED SCIENCES, INC.

October 1, 1993

Mr. Greg Hula
U.S. Department of Energy Idaho Operations Office
785 DOE Place
Idaho Falls, Idaho 83401-1562

REFERENCE: Contract No. DE-AC07-90ID12918

SUBJECT: Task 10.04 — Community Relations Meeting Assistance: Pad A Public Meetings in Idaho Falls (August 17), Boise (August 18), and Moscow (August 19)

Dear Greg:

Enclosed is one set of copies of the final certified transcripts from the referenced public meetings. By copy of this letter I am distributing (1) the originals to Mercy Sekot of EG&G Idaho for incorporation in the Administrative Record, and (2) one set of copies each to Dean Nygard at the state of Idaho, Mary Jane Nearman at the U.S. Environmental Protection Agency Region 10, and Vaughn Halford at EG&G Idaho.

I will retain one set of copies for use in preparing the annotated version for the Administrative Record.

Please do not hesitate to contact me if you have any questions.

Very truly yours,

Cassandra J. Hemphill
Community Relations Representative

Enclosures
cc w/ enclosures:
V. Halford, EG&G Idaho
M. J. Nearman, EPA Region 10
D. Nygard, IDHW
M. Sekot, EG&G Idaho (originals)

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PAD A PUBLIC MEETING

Westbank Inn
475 River Parkway
Idaho Falls, Idaho

August 17, 1993
7:05 p.m.

AGENCY REPRESENTATIVES

U.S. Department of Energy, Idaho Operations Office
Don Macdonald
Greg Hula
Alan J. Dudziak

EG&G Idaho
Vaughn Halford
Bob Nitschke
Reuel Smith

Environmental Protection Agency, Region 10
Mary Jane Nearman

Idaho Department of Health and Welfare
Division of Environmental Quality
Dean Nygard
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ORIGINAL

I N D E X

IDAHO FALLS, IDAHO, TUESDAY, AUGUST 17, 1993, 7:05 P.M.

*****

MR. HULA: My name is Greg Hula. I'm the Project Manager for the Department of Energy on the Pad A project. I'd like to welcome you all for coming out tonight. I appreciate you taking the time out of your schedules to come down and hear what we have to say.

The purpose of tonight's meeting is basically threefold. We'll be providing an overview of the Proposed Plan for Pad A, some additional details on the types of wastes on the pad, as well as how the pad was constructed. We'll have a question and answer session in which you'll have a chance to ask questions about the Proposed Plan, the alternatives we evaluated for Pad A, as well as the study that was conducted on the pad. And that will be followed by a formal verbal comment period at which time you'll have the opportunity to provide verbal comments on the Plan, on the alternatives that we evaluated in the Plan.

We've got some forms in the back of the room, comment forms, that you're welcome to provide written comments on. These forms are also included in the back of the Pad A Proposed Plan. So if you want to get a copy of that, just write your comments down. The forms are

pre-addressed to the Department of Energy and they're prepaid, so just drop them in the mail, and we'll be sure to get those.

In addition, on the back of the agenda, we've got an evaluation form. I would appreciate you, if you have the time, if you want to take the time to do this, give us your comments, your feedback on how the meeting went tonight, how well the presentation was provided, how well we answered your questions, and how well you felt the verbal comment period went. I want to mention that the formal comment period will run through August 26th, about two more weeks to get comments in on the Proposed Plan for Pad A.

With that, I'd like once again to thank everybody for coming out. And I'd like to introduce Mr. Dean Nygard with the State of Idaho Department of Environmental Quality, and Ms. Mary Jane Nearman with EPA, Region 10, out of Seattle. I would also like to introduce my counterpart at EG&G Idaho, our contractor for DOE, Mr. Vaughn Halford, who will be giving the discussion -- the details on Pad A and the wastes on the pad. With that, we'll hit off the meeting.

The Idaho National Engineering Laboratory is an 890 square mile facility located in this portion of Idaho. There's several facilities located on the INEL.

The one being of importance to us tonight, the Radioactive Waste Management Complex located in the southwest portion of the INEL. The Radioactive Waste Management Complex was opened in 1952 for the disposal of low-level radioactive wastes generated at the INEL. In 1954, the Radioactive Waste Management Complex began accepting wastes from other DOE sites such as the Rocky Flats Plant, as well as commercial nuclear facilities.

This picture here shows basically the Radioactive Waste Management Complex, and it's composed of two main areas. We've got the Transuranic Storage Area over here with the white air-support buildings. This facility was constructed in 1970 and is used for the aboveground storage of transuranic waste. It's basically wastes generated at the Rocky Flats Plant from nuclear weapons production. These wastes are ultimately destined to go to the Waste Isolation Pilot Plant in New Mexico for final disposal.

The other large area you see here is an 88-acre site known as the Subsurface Disposal Area. That's the area that contains all of the buried waste at the RWMC. It's made up of several pits and trenches throughout the 88 acres, and it also contains the area which is the subject of tonight's discussion, Pad A. Pad A is one of several operable units within the Radioactive Waste

Management Complex.

With that, I'd like to turn it over to Vaughn Halford, who will give some background information on the pad, as well as the wastes.

MR. HALFORD: Good evening. Pad A was built in 1972 for the disposal of containerized radioactive waste. The pad is a three- to four-inch asphalt pad that's laid over three inches or so of gravel. The 55-gallon drums and boxes were stacked on the asphalt pad and then covered with polyethylene or plywood and then covered with three to six feet of soil. Then the soil cover was seeded with crested wheatgrass to attempt to eliminate or prevent erosion.

The waste containers were stacked in this configuration on this portion of the pad, and you can see it's located in that north central portion of the Radioactive Waste Management Complex, specifically the Subsurface Disposal Area. Closure was completed in 1978, so it was open from 1972 to 1978.

The types of wastes that were disposed of on Pad A consist of entirely solid wastes in the form of 55-gallon drums and boxes. These are evaporator nitrate salts from the Rocky Flats Plant, and that makes up about 71 percent of the total volume of the waste.

In addition, we have uranium oxides and

uranium and beryllium foundry and machining wastes also from the Rocky Flats Plant, combined with some barrels of dry sewage sludge that totals another approximately 22 percent of the waste. The remaining waste is made up of miscellaneous INEL-generated wastes, which were wastes produced here at the site.

This gives you an idea of the pad just before its closure in 1978. It gives you the configuration of the waste containers. The drums were stacked a maximum of eleven high and the boxes were stacked a maximum of five high.

The inventory records that we have on Pad A give us a really clear picture of the waste types and contaminants that we have at Pad A. The inventory records that I'm talking of consist of shipping records from our generators such as the Rocky Flats Plant. Additionally, the process information that we have based on those operating facilities and discussions with personnel from, for example, the Rocky Flats Plant.

Two investigations were conducted at Pad A, one in 1979, the other in 1989. The investigation in 1979 was done at the northeast corner to go in and try to get an idea of the condition of some of the oldest drums on the pad. Those had been placed there in 1972. That investigation showed that the drums were in really good

shape, but some of the boxes were starting to show various stages of deterioration.

The investigation or penetration project in 1989 went in at the south central portion of this waste here in an attempt to actually retrieve some drums. After the soil cover was removed, the drums and boxes were observed. The boxes were in deteriorated stages, and the drums where the plywood box -- or the plywood layer had been laid on top of it actually helped corrode the drum at those contact points and there was some rusting of those drums. The drum was then -- one single drum was retrieved and transported to the Transuranic Storage Area where it was stored for two years.

At that point in our investigation, we retrieved that drum, pulled it out, and took it out to a lab for analysis. The analysis of the contents showed, first of all, that we had some of the nitrate salts from Rocky Flats. Those nitrate salts that we analyzed for showed that the contaminant types and concentrations that Rocky Flats said we had been shipped were almost identical or very similar to the analyses that we performed on those drums. That drum that was opened, the liners inside were intact and the drum and all was in fairly good shape.

The monitoring that's done at Pad A has consisted of taking soil samples at various locations

around the overburden or soil cover. We've also taken surface water samples when surface water or pools of rainwater are available. We are also currently monitoring groundwater in and around Pad A at the RWMC, and we are also taking air samples, continuously monitoring air out there. And to date, we have no indication of any contaminants from Pad A that have left the site or the Pad A area.

And with that, I think I'll turn it back over to Greg, and he will continue to walk us through the investigation done on Pad A.

MR. HULA: I wanted to mention a couple of other things before I get going to discuss the risk assessment. I wanted to mention that we do have a court reporter here tonight who is taking an official transcript of the meeting, including the presentation, question and answer session, and the formal verbal comments.

And also, Mr. Alan Dudziak from the Department of Energy will be providing a 15- to 20-minute overview of activities associated with the Central Facility Area Landfill following the Pad A meeting tonight.

Vaughn talked about the wastes that are sitting on the pad, the types of wastes and things like that. Once we identified the wastes and what we had, the next question we had to answer in the assessment was what

problem or potential problem did those wastes pose to workers or the public or the environment. The way we do that is through conducting a baseline risk assessment, basically evaluate the potential risks from the site assuming no action is taken at the site. For purposes of Pad A, we evaluated the risk for a period of one thousand years into the future.

The baseline risk assessment essentially identifies the contaminants that pose the risk, as well as how people could come in contact or be exposed to those contaminants. For example, this is kind of a conceptual model of how we assume contaminants could move from Pad A. We assume that burrowing animals could dig into wastes, and through their burrowing, contaminants would be brought to the surface. Also, we assume plants with fairly long root systems could grow into the waste and the root systems would basically uptake the contaminants. When the plants die, you've now got additional contaminants on the surface of the pad.

Once the contaminants reach the surface of the pad or the cover, people can be exposed to the contaminants through inhalation of air contaminated with dust, as well as ingestion of contaminated soil, or direct exposure to radionuclides in the soil.

To approach -- or to determine how the wastes

can move down to the groundwater basically because these are solid wastes, we have to have water moving through the wastes. Water in the form of rainfall moves through the wastes, dissolves the salts, much like table salt dissolves in a glass of water, and that water moves all the way down to the aquifer beneath Pad A 585 feet. Once those contaminants reach the groundwater, people can become exposed to those contaminants through drinking the contaminated groundwater, or for the future use scenarios we looked at, by using that contaminated groundwater to irrigate food crops and then eating those food crops.

To evaluate or estimate how much contamination can move from the pad to the groundwater, we used computer models that simulate how the contaminants move through the environment, to the groundwater, to the surface. But because there's uncertainties associated with the site -- for example, we don't know how long the plastic liners of the drums will remain intact on the pad; we don't know specifically how much water is actually moving through the wastes on the pad; and once that water reaches the waste, we don't know how far down in the aquifer -- how far down in the subsurface it moves. Does it move only ten feet, does it move fifty feet, does it move the entire 585 feet to the groundwater?

To account for this type of uncertainty, we

made conservative assumptions in our modeling. For example, we did not take credit for the plastic liners being intact in the boxes which contain about 56 percent of the wastes right now. We assume that because there's no plastic liners and the boxes are virtually nonintact, that the mass of waste, or 56 percent of the waste on the pad, could move or was available to migrate to the groundwater right now.

Similarly, we assumed about five centimeters per water -- five centimeters of water or two inches per year was moving through the wastes and to the groundwater. Based on studies outside of the Radioactive Waste Management Complex surrounding the RWMC, the actual infiltration area in undisturbed areas out there is about one centimeter per year. So we tried to be conservative by a factor of four or five in this assumption.

The overall result of the conservative modeling we did is that it tends to overestimate the potential concentrations of contaminants that could reach the aquifer. We wanted to be conservative to ensure that we weren't underestimating future potential impacts to the groundwater beneath Pad A, in other words, give us a margin of safety.

Using the results of the modeling we conducted for Pad A, the risk assessment basically

indicates that there is no current risk to workers, public, or the environment from the contaminants on the pad. The only potential future risk is based on a family living at the Pad A boundary about 250 years in the future and drinking contaminated groundwater or groundwater contaminated with peak concentration of the nitrates. Those peak concentrations based on the results of our modeling, which we moved the contaminants from here to here, were about 117 parts per million. The drinking water standard for Pad A -- the drinking water standard for nitrates is about ten parts per million.

As the nitrates -- or as the modeling indicates, there was no unacceptable risk to human health at the RWMC boundary and outward. The concentrations of nitrates at the RWMC boundary were shown to be about 17 parts per million, and then they decrease and dilute themselves as they move on to the -- as they move on towards the INEL boundary.

I'd like to emphasize the fact that this is modeling. The risk here, assuming someone is located here and drinking contaminated nitrate -- or groundwater contaminated with nitrates is based on modeling results which set up a certain hypothetical case in the future given a certain set of assumptions and conditions. As Vaughn indicated, based on past sampling and monitoring

activities, we have no indications that the contaminants are leaving the pad at this time.

Using this information, we wanted to go back and do a reality check, if you will, about what we knew about the risk assessment and the physical characteristics of Pad A at this time. As I mentioned earlier, to ensure that we weren't underestimating the risk, we used conservative assumptions in our modeling which tends to overestimate the concentrations -- potential concentrations of contaminants in the groundwater, which ultimately overestimates the potential risk from the pad.

In addition, the existing cover prevents exposure of wastes to the groundwater pathway as well as the surface pathway. We believe that maintaining that existing cover will continue to provide protection of -- or continue to be protective to the public and workers. In addition, as I just mentioned, we have no indication that contaminants are migrating from Pad A based on about fifteen years of sampling and monitoring data.

With that information, we focused our feasibility study on alternatives that ensure a cover continues to remain intact over the Pad A wastes. We looked at two action alternatives, containment of the Pad A materials, and limited action. The No Action Alternative up here is required to be carried through the feasibility

study in accordance with the CERCLA laws. That would -- this alternative assumes no action is taken at the site. We would continue groundwater, soil, surface water, and air monitoring as has been done over the last several years.

The first action alternative, containment of Pad A materials, would consist of constructing composite earthen cover over the existing soil cover on Pad A. This composite cover would consist of rocks, a sand layer, a clay layer, as well as soil, and be revegetated. One of the options that could be evaluated -- or that we evaluated under this containment alternative was the inclusion of a synthetic liner or a geomembrane liner in addition to the other materials on the containment alternative.

As with the No Action Alternative, because wastes would be left in place, we would continue to monitor groundwater, surface water, air, and soils to provide early indication of any potential release of the contaminants from the pad.

The second action alternative we evaluated, we've identified it as our Preferred Alternative, basically is based on the fact that the existing soil cover can be protective both now and in the future of -- can be protective of public and the workers. And this action or this alternative essentially continues to maintain the existing soil cover. We would go in and recontour it to

enhance -- to enhance surface water runoff from the cover, and then continue to maintain that existing soil cover.

As with the other alternatives, we would continue monitoring groundwater, surface water, air, and soil to provide early indication of any release of contaminants from the pad.

With these two action alternatives, we are assuming that DOE is going to continue to maintain control of the Radioactive Waste Management Complex for the next hundred years. That's based on current policy which requires us to prevent -- basically control low-level radioactive waste disposal sites for a hundred years following closure.

With this alternative also, the State of Idaho Department of Environmental Quality and EPA would provide independent reviews of this monitoring data to ensure that the cover continues to provide protection of the workers and the public. This alternative would result in a Record of Decision for Pad A being reevaluated in two years and at least every five years thereafter.

With that, I would like to open it up to any questions you might have.

And, Reuel, I thought -- we have comment cards?

MR. REUEL SMITH: We have some cards

available. If you'd like to write a question down and hand that card in, I'll pick up the cards and deliver those to Greg or the State or EPA. So we'd like to hand those out now.

Does anybody need a pen to write with? We've got extra pens.

AUDIENCE: I'd like to ask about the relative toxicity of the materials stored on Pad A in terms of how much total contamination is available in terms of how much water would it contaminate to a simple index such as the drinking water limit.

MR. HULA: Are you asking how much water we believe could potentially be contaminated from -- if the contaminants were to reach the aquifer at some time in the future?

AUDIENCE: Yes. Assume that they are.

MR. HULA: Okay. We didn't do any specific calculations to evaluate how much water would be contaminated for our assessment. However, I know Dave Frederick went off and did some calculations assuming that, I think, all the waste was basically dumped in the aquifer?

MR. FREDERICK: That's correct, Greg.

MR. HULA: Do you want to talk to that?

I'm sorry. Let me introduce Dave real

quick. Dave is -- he works with Dean Nygard with the Department of Environmental Quality at the state.

MR. FREDERICK: Thank you, Greg.

I did some calculations just to determine if all the wastes at Pad A were just dumped right into the aquifer instantaneously, all of the waste, and I don't know really what -- you know, it would certainly take a catastrophic event of some sort for that to happen. But the areas that would be -- the area of the aquifer that could be contaminated or would be contaminated if that mechanism were to occur, for nitrate, it would be two square miles of the aquifer would be -- could be contaminated if that occurred. That would be to the MCL.

And I also did the calculation for uranium, and that was 42 square miles. And for plutonium, it was 17 square miles.

MR. HULA: Does that answer your question, sir? Does that help?

AUDIENCE: Yes. What was the assumption about the depth of the aquifer?

MR. FREDERICK: Excellent point. I assumed that the aquifer was a hundred meters thick.

AUDIENCE: Isn't it known to be far thicker than that?

MR. FREDERICK: Yes. This would be

conservative. Using that hundred meters would give you a small volume of water, so it would be more conservative in the area that you would predict would be possibly contaminated.

AUDIENCE: Thank you.

MR. HULA: Other questions? Yes.

AUDIENCE: You mentioned the boxes when you went in -- I think Vaughn mentioned when you went in and did some observations of the various states of decay the boxes or the barrels were in. You said they were in various states of decay. Can you be more specific and tell us what sort of condition they were in?

MR. HALFORD: Sure. In the '89 penetration --

MS. NEARMAN: Would you repeat the question one more time?

MR. HALFORD: One more time louder?

MS. NEARMAN: Yes.

MR. HALFORD: He's asking what condition the boxes were in during those investigations. The boxes in the '89 penetration were basically nonexistent. The structure was still there, but what was holding them upright, for example, would be the soil. The plastic liners that -- the one box that they could see during that penetration was still intact. That liner, that

polyethylene liner was still intact, but the box itself, if you were to move soil away from the wooden structure, it wouldn't maintain.

AUDIENCE: Inside that liner, what condition -- is that solid waste directly inside that liner?

MR. HALFORD: Did everybody hear that one? He's asking what waste was directly inside that polyethylene liner. Those are solid wastes. The boxes also contain, for the most part, the nitrate salt wastes.

And I would encourage everybody after the question and answer comment period, there is a photograph of those salts back on the blue photo section back there. It gives a good idea of what they look like.

MR. HULA: Did that answer your question?

AUDIENCE: Yes.

MR. HULA: Yes, sir.

AUDIENCE: The legend back on the photos, I got the impression that in the '89 investigation that the intent was to remove possibly several barrels, but the integrity of the barrels was such that only one was able to be retrieved, that the others had holes or were otherwise damaged. What is the amount of damage on the barrels?

MR. HULA: I believe the question is to what extent are the barrels deteriorated or were known to be deteriorated in the 1989 penetration.

At that time I believe there were pinholes and maybe pen-size holes in the top layer of the barrels.

I think you've got some more detail on that.

MR. HALFORD: What they observed was anywhere where the plywood was in contact with the drums -- the wood that they used was a fire retardant type wood, and the chemicals in that wood had reacted where they had touched the metal drums. In some of the photos that they got of one or two layers down, there was some external rust, but none of the holes that were observed on that top layer was exposed to either the polyethylene or the wood. And those holes that they saw were various sizes depending on where the wood came in contact, but the drums themselves were corroded to the point that there were holes in them.

MR. HULA: I think this gentleman had a question.

AUDIENCE: How solid is this solid waste? When the boxes decompose, is there going to be a lot of subsidence to where we're going to end up with a big hole in there where you can't drive a Cat up on top to pile more dirt up on top of there? How solid is that waste?

MR. HULA: There is, I believe, some -- the waste doesn't completely fill a container, so that if the containers fail, you would have subsidence. There is some air in the containers, the boxes and the drums. And

we've had -- we've noted times of subsidence in the past. And to correct for that, to design for that, to implement any one of these actions, that would definitely have to be taken into consideration before putting another cover on the pad. We would have to account for that in the design phase for implementation of an alternative like this. Does that answer your question?

AUDIENCE: Okay. So this Preferred Alternative only indicates an alternative that we need to design for, it doesn't really give us an actual plan of what we really are going to do; is that correct?

MR. HULA: Yeah, I think you're right. This is -- the actual design of this alternative is yet to be determined. This is -- conceptually, this is an alternative that we could implement, and it can be compared -- we'd develop it to the point where it can be compared to other alternatives in the feasibility study, but the actual design of that has not yet been done.

Did that answer your question?

MR. MACDONALD: I'm not sure that got to the heart of your question.

AUDIENCE: The heart of my question really is if the Preferred Alternative is to maintain that cover, and maintaining that cover just means filling in the holes where something subsides, how are you going to do that?

Can you drive a piece of earth-moving equipment up on top of that cover? Do we know that?

MR. HULA: Vaughn, can you talk to that?

MR. HALFORD: We have had subsidence -- that's the term for that -- events in the past, and those have not been so extensive that we couldn't get earth-moving equipment up there. The number of those that have occurred in recent years has dropped quite significantly. So either we have had the number of containers fail that are going to subside or the support underneath from the soil or the boxes and drums has stopped indicating subsidence now.

But the design would have to incorporate some allowance -- I don't want to use the word allowance. What do I want to get at? I can't think of the word right now. I just lot my train of thought.

MR. MACDONALD: We've got to take into account the fact that subsidence can take place and allow for that and make sure that whatever specific designs we come up with, we can in fact implement those. And that shouldn't be that hard of a problem to be able to correct subsidences. There would be ways to place material without having to initially drive up -- drive up the pad necessarily, so there are ways to deal with subsidences and place material without having to drive up on the pad cover

every time, but that would be something that would be planned for is to make sure that subsidences are corrected.

MS. HEMPHILL: Greg, could you introduce --

MR. HULA: Yeah. This is Don Macdonald with the Department of Energy. He's basically the Buried Waste Program Manager, has responsibilities for Pad A and all the other RWMC ER activities.

AUDIENCE: Part of this question, Greg, was how solid is solid. Do you want to try and quantify that? Some of it was filled with cementitious material to absorb the free liquids, et cetera.

MR. HULA: I don't know that I know the answer to that right off the top of my head.

Sir?

AUDIENCE: All the drums had cement put on the top of them, all the evaporated salt drums.

MR. HULA: But as far as -- are you getting at like compactibility and things like that?

AUDIENCE: No. He asked how solid is solid. You said it was a solid mass. So is it the consistency of concrete, consistency of sludge?

MR. HULA: I see what you're saying. Basically, as the gentleman in the back mentioned, there was concrete material, portland cement basically, dry cement, placed on the bottom of each drum and box before

the salts were placed, and then there again, placed on top. We're talking fairly solid material, sir, similar with the uranium oxides and the beryllium wastes and that.

AUDIENCE: How about the sewage sludge?

MR. HULA: Sewage sludge, our --

AUDIENCE: Aren't they relatively fluffy?

MR. HULA: I think that's probably a fair assessment. Also, the miscellaneous INEL wastes, miscellaneous wastes generated at the INEL, lab wastes, things like that, there's probably going to be quite a bit of air in that such that it's not -- you know, maybe 50 percent, 40 percent solids in drums, something like that.

Other questions? We've got a couple up here. One question, "Why pile conservative assumption upon assumption? We've tried for years to be conservative, but realistically so."

I think the gist -- let me take a stab at the gist of the question, which is why be overly conservative in our modeling, and I'll try to answer that. The reason we made conservative assumptions is for purposes of what we're doing here, assessing potential risks to the future -- to future receptors, to the public, or the workers. We want to ensure that we don't underestimate what the potential risks from the contaminants of Pad A are or is. As such, we have to use the best available information

we've got. And in many cases, that tends to be -- it tends to be conservative in nature, and it's how we work through the process.

"The waste is a nitrate salt mixture. Nitrate salts are known to undergo rapid exothermic reactions (explosions). What is the potential for the waste to explode?"

Vaughn, I know you guys have looked at that to a small degree. Do you want to take that?

MR. HALFORD: The nitrates that are on Pad A are results of some solar pond evaporation activities that are basically from dried nitric acid baths. And those nitrate salts are contained in containerized -- with the exception of perhaps the poly liners in the drums, there's no fuels available for that type of reaction, and the chance of a thermal --

MR. HULA: Exothermic reaction.

MR. HALFORD: -- exothermic reaction wasn't specifically evaluated. However, I guess in the case that you were digging it up or working with it and exposing it to oxygen and fuels and gave it an ignition source, there's a probability that that could happen. In its current state where it's static and not being disturbed or provided fuel and oxygen, I think the likelihood is very low of that occurring.

AUDIENCE: Zero. Nitrates don't explode on their own. You have to mix them with a fuel first.

MR. HULA: That's what Vaughn was mentioning.

AUDIENCE: Yeah, in one short sentence.

MR. HULA: Other questions? Anything that you'd want clarified?

Yes, sir.

AUDIENCE: In the May Reporter, mention was made that DOE was seeking private interests to take low specific activity wastes and reprocess it off site. Was the Pad A material considered part of this?

MR. HULA: No, it wasn't. And actually, the details of what you're talking about, I'm not quite sure.

Reuel, do you have -- I assume it's a Waste Management initiative, but I don't have any details on that.

MR. REUEL SMITH: There was an introductory article about treating the wastes that we had stored at the Radioactive Waste Management Complex at the Transuranic Storage Area, for which right now we are storing those wastes. The Department of Energy and EG&G Idaho are looking at some alternatives that would invite the private sector to bring in treatment technologies. There has been a request for information that has been released to the public and to private contractors, and at some point in the

future a request for proposal will be going out to potential bidders on a project like that. The more we know about that in the next few months, we'll also put follow-up articles in the Reporter. But right now, that's about where we are with it.

MR. HULA: We've got another question here. "Records of waste. You appear to feel that the records provided by Rocky Flats are 'good.' Nothing can be further from true. Drum counters were crude at best. Workers used evaporator salts to 'bury mistakes.' At best, records are one plus or minus a factor of ten."

We acknowledge the fact that there are some uncertainties. There is uncertainty in the quantity of waste that's sitting on Pad A. And to address that in the risk assessment, we identified -- and I believe it was up to an order of magnitude that we could be off nonconservatively with the contaminants -- the quantity of contaminants that could be in Pad A, and we've addressed that through the risk assessment process and in the discussion of uncertainties in this entire process in the remedial investigation report.

I don't know if that answers your question. We acknowledge -- we acknowledge this. We acknowledged it in our study.

Yes, sir.

AUDIENCE: Have you actually found errors in the analyses you've done?

MR. HULA: No. No. We've got the one drum that was retrieved in '89, and it confirmed what the shipping records told us came up here.

AUDIENCE: Are you saying that you never found an occasion when the stated amount was proven to be wrong?

MR. HULA: Let's see. We went through a -- to give you a direct answer to your question, Vaughn, a validation that was done on the Pad A shipping records, was there ever a case when the quantities were found to be wrong?

MR. HALFORD: The shipping records that we received and respectively were turned into our disposal records were verified against what the data base that we use contains for those totals. And in reviewing all the records for Pad A, we found five records that had curie contents missing from the record that were later able to recover and one set of records that were unreadable or we couldn't ever determine the quantity of the curie content. I don't know if that answers the question.

MR. HULA: I'm not sure it does.

AUDIENCE: Well, I think you need to understand that again, because of the state of the art of

the drum count, there's wide variances. I know of drums listed as LSA that contained over one kilogram of plutonium. I'm not saying it's on Pad A.

MR. HULA: We don't know that it is.

AUDIENCE: But don't think just because it comes from down at Rocky Flats and it has LSA on it, that that's what it is.

MR. REUEL SMITH: Could we explain what LSA stands for?

MR. HULA: The acronym means low specific activity, and that's basically a certain amount of activity in a radioactive waste shipment.

AUDIENCE: Could you define it more carefully, please?

MR. HULA: Bob, do you have that?

I can't. I don't know specifically what the threshold for an LSA shipment is.

AUDIENCE: Nanocuries, isn't it, less than ten nanocuries?

MR. HULA: I don't know. I can get back with you. I don't know right off the top of my head what that is.

AUDIENCE: I think it's ten nanocuries.

MR. HULA: "The three bullets on your 'risk management poster' seem to indicate no risk nor a possible

development of risk, so why not No Action? What is driving the choice of Alternative 2?"

The alternatives that continue to ensure that a containment -- that the Pad A wastes are contained is driven by the fact that we know the existing soil cover is eroding. And over time, there's a lot of uncertainty as to the long-term integrity of that existing cover. So the reason, although the risk to the groundwater and the surface was not unacceptable, because there is uncertainty in the long-term integrity of the cover, we want to make sure that a cover remains in place over the Pad A waste.

AUDIENCE: Could I address that in a little more detail?

MR. HULA: Sure.

AUDIENCE: Following up on that question, I'm wondering how the Limited Action varies from No Action or what is currently good management practice on the pad.

MR. HULA: It differs from No Action in the sense that No Action would be nothing. It wouldn't even be good management practices, John. The Limited Action basically continues what has been done, the good management practices over the last fifteen years since the pad was closed in '78. But it also includes additional monitoring, for example, monitoring of infiltration rates, to try and better define how much water is moving through the wastes

and things like that. So in reality, limited action isn't the same as no action.

MS. NEARMAN: It also includes institutional controls.

MR. HULA: Thank you, Mary Jane.

As Mary Jane pointed out, it does also include institutional controls. DOE will continue -- basically will continue to control access to the site for the next hundred years.

AUDIENCE: I assume that No Action would simply move up the whole schedule of leakage by about a hundred years from what you actually estimated or modeled; is that right? Everything that you modeled from a hundred years on when presumably there is No Action would be moved up a hundred years; is that right?

MR. HULA: You mean to now?

AUDIENCE: Yes. We would be beginning that period now instead of beginning that period a hundred years from now, so that 150 years from now, the nitrates would start leaking instead of 250 years from now.

MR. HULA: No. I think I disagree with that, John, and let me see if I can formulate why.

We assumed that the waste in the boxes could move now, about 56 -- the waste in the boxes comprises about 56 percent of the total waste on the pad. I believe

the liners, the plastic liners, and the drums themselves will remain intact for some period of time, be that 100 years, 20 years, or 150 years. In order to have all that waste available to migrate now, one would have to assume that none of the containers are intact, i.e., to move it all up a hundred years, we'd have to assume that none of the containers on the pad are intact, i.e., the drums or the liners themselves. And I'm not -- that would definitely be conservative, I think, based on -- did that answer your question?

AUDIENCE: Yes. I guess it means that the No Action alternative wouldn't move up the schedule as much as I thought.

MR. HULA: No, it doesn't.

Other questions?

AUDIENCE: What percentage does Pad A represent of the total of the so-called disposed wastes?

MS. HEMPHILL: What was the question, Greg?

MR. HULA: What percentage of the total disposed wastes at the INEL does the Pad A wastes represent. And if I could clarify that, I assume you're asking what percentage of the wastes at the Subsurface Disposal Area, buried at the Subsurface Disposal Area?

AUDIENCE: For starters, yes.

MR. HULA: Okay. I believe the estimate of

the total quantity of waste buried at the Subsurface Disposal Area is about two million cubic feet.

Does that sound right, Vaughn?

MR. HALFORD: I can't remember the numbers.

MR. HULA: I don't know the numbers off the top of my head.

MR. HALFORD: That's good for the transuranic wastes.

MR. HULA: What's that?

MR. HALFORD: That's good for the transuranic wastes.

MR. HULA: I don't know the specific number of the total quantity of waste buried out there. Pad A, being thirteen thousand cubic yards, would be a very small fraction of several million cubic yards of waste in the remaining 88 acres.

AUDIENCE: Why are you even considering volume? It's curies that are important, the curie content of Pad A compared to the curie content of all of the rest of the waste buried at SDA.

MR. HULA: The curie content's important for the radionuclides. For the nitrate salts, the mass --

AUDIENCE: For the risk, it is.

MR. HULA: Yeah.

AUDIENCE: So why compare volume on Pad A

with SDA? That's really immaterial.

MR. HULA: I was just responding to this gentleman's question.

AUDIENCE: Could you finish the sentence? The radiological part of it is also of much interest here. You said the curie content is what with respect to the rest of it? Is it small or is it large?

AUDIENCE: They've got the numbers. I can't quote them right here.

MR. HULA: There again, I think the curie content on Pad A would be just a small fraction of what's buried in the rest of those 88 acres.

AUDIENCE: Almost negligible, right?

MR. HULA: Yeah, probably negligible. I mean, if you look at 13,000 -- just on a volume perspective, 13,000 yards divided by several million cubic yards, you're down in less than fractions of a percent, and my gut feeling would be -- I don't know the specific numbers. My gut feeling would be it's fractions of a percent for the activity also, maybe even much less.

AUDIENCE: That number is available.

AUDIENCE: I'll have to dig it out, I suppose. Thank you.

AUDIENCE: Isn't that material also less than ten nanocuries?

MR. HULA: All but two drums, yeah. And the average activity of the waste on Pad A is approximately one nanocurie per gram.

Yes, sir.

AUDIENCE: You say all but two drums is less than ten nanocuries?

MR. HULA: Yes.

AUDIENCE: I beg to differ. In the reading that I've done on the material on Pad A, I saw an itemization of sixteen shipments of material that was greater than ten nanocuries, and the specific activity ranged up to five hundred nanocuries per gram.

MR. HULA: You're absolutely correct. I believe the two I was referring to, there were two drums that are greater than a hundred, and then I believe the remaining were between ten and a hundred. They were greater, you're absolutely right.

AUDIENCE: The list I saw of the sixteen shipments that exceeded ten nanocuries per gram was very unspecific about how much of those shipments -- it left one impossible to deduce what was really in those shipments or who directed them to disposal as opposed to the removable fractions. But I certainly want to correct the two drums and say there were sixteen shipments.

MR. HULA: Correction well noted. I agree.

That's in the report.

MR. HALFORD: Sixteen drums. Sixteen drums, not shipments.

MR. HULA: Thank you. Sixteen drums, not shipments. There are sixteen drums --

AUDIENCE: The material said shipments. It said shipments, not drums.

AUDIENCE: There's a listing in that -- wasn't it Bob Passmore who put out a listing of the drums that exceeded ten nanocuries on the pad?

MR. HULA: That's what we're talking about. It may have said shipments, but the intent was there were sixteen drums of waste placed on the pad that exceed ten nanocuries per gram.

AUDIENCE: Is your intent to leave those sixteen among the disposed wastes?

MR. HULA: Yes. We don't know where they're located within the pad.

A comment to "please clarify the risk of radionuclide versus nitrates." And I don't know who wrote the comment. I'm trying to get some clarification. Are you asking did our risk -- what the risk assessment showed the potential risk from radionuclides to be versus that of the nitrates?

Basically the risk assessment indicates that

the radionuclides don't pose an unacceptable risk to the groundwater or the surface pathway for the one thousand years we evaluated. Based on the modeling, because the nitrates reached the groundwater, that was the contaminant that basically posed the risk from Pad A.

AUDIENCE: Is your assumption, then, that the radionuclides don't reach the groundwater, that the nitrates do?

MR. HULA: Based on the modeling, that's correct.

AUDIENCE: Over the next thousand years?

MR. HULA: That's correct, based on the modeling we conducted for the pad.

Actually, I need to clarify that because one radionuclide does reach the aquifer within a thousand years, and it's the potassium-40, the potassium-40 portion of the nitrate salts, but that radionuclide didn't pose an unacceptable risk from the groundwater.

As the salts -- maybe I can clarify this. As the nitrates move with the groundwater -- I mean, move with the water to the aquifer, along with the nitrate salts, potassium-40 is a constituent in that salt, and that is a naturally occurring radionuclide, and that radionuclide did reach the aquifer within a thousand years. The plutonium, the uranium, the americium did not reach the aquifer within

a thousand years. But the potassium-40 didn't pose an unacceptable risk for the period we evaluated.

If there are no other questions, what I'd like to propose is we take a 15-minute break, come back about 8:15, and we will accept formal comments on the plan and the alternatives.

(Recess taken.)

MR. HULA: We've had one individual who has shown an interest in providing formal comments tonight, and would like to welcome any of you other folks, if you want to stand up and provide formal comments, verbal comments, feel free to do that.

I wanted to reiterate the fact that we do have the forms, comment forms, in the back of the room. Feel free to take those and provide written comments. And also, the evaluation sheets for how the meeting went on the back of the agenda, if you'd take your time, take a couple of minutes and give us some feedback on that. I would really appreciate that.

With that, I believe --

MR. REUEL SMITH: Could we mention that when they come up, if they would state their name for the record, and that would help us and help the court reporter know who to put down.

MR. HULA: In case you didn't hear that, if

you opt to come up and provide formal verbal comment tonight, please state your name and spell the name for the court reporter so we have an accurate record of who provided the comments.

With that, I believe, Mr. Donnelly, you had signed up.

MR. DENNIS DONNELLY: My name is Dennis Donnelly. I live in Pocatello.

I would like to give what is not a formal presentation. I don't have any neat pictures, slides, or anything like that. I would like to take a little bit of your time and give my perspectives on these things. I haven't finished reading all the material on Pad A. I've been making the attempt. There's a lot of it, and I only discovered that it's accessible kind of recently, so I haven't been through it all, and my formal comment will have to be done in writing. We've got a couple weeks that we can finish our comment and mail it in, so I guess I'll do that.

But I would like to take a little bit of time, maybe equal time with the folks from DOE. We had a whole hour here. And I would like to invite you to interrupt with questions in any case in which I may be incorrect.

First, a little bit of history. The dumping

of plutonium wastes at the INEL went on from the early '50s until 1970 essentially in secret. And I was here in 1970. I was young then, single. Now I'm a grandparent.

In 1970, these matters became public when what happened? Well, I think it was a news clip about the fire in '69 that made it -- made it public here. In 1969, there was a disastrous fire at the Rocky Flats Plant in which plutonium burned and contaminated the plant. And in the course of shipping the fire waste to Idaho, it became public knowledge, I think, that these materials were being shipped here.

Now, that became of great concern to the agricultural and livestock folks, and I believe it was Erkins, a fish farmer, who was really pressing the government to ensure us that the aquifer not be contaminated. The fish farmers, of course, down in the Hagerman area use the water directly in their operations.

And in response to that, the then chairman of the Atomic Energy Commission, Glenn Seaborg, a discoverer of plutonium, co-discoverer of plutonium, promised our Governor Andrus and our Senator Church that the plutonium -- that the -- yes, he said the plutonium waste. He said the alpha-emitting wastes. That would cover all transuranics. That the transuranics and the high-level wastes would be removed from INEL. He did not qualify that

except to say hopefully by the end of the decade, the '70s.

Now, this again one man's history here of this story. If I'm wrong, let me know. He didn't qualify that statement to say, woop, we're going to leave the low-level wastes here or we're going to fail to remove the materials that were here from 1954 -- that were dumped here from 1954 to 1970. He essentially promised to right the wrong that had been done to Idaho by secretly doing this stuff. And it was pretty straightforward and stated with some caveats about finding a place to put the stuff. And, of course, you may be aware that salt burial in Lyons, Kansas, was then the big solution.

And, well, our friends in the profession here know what happened to that, I guess. The Lyons, Kansas, site basically became deemed to be geologically unsuitable for waste disposal. But it's a solution that they thought they had in hand. The site is remarkably similar to the WIPP location, and I have personally little faith that that site is geologically suitable. But that's another story.

Let me continue my story about the wastes here at Idaho. We had this -- this will be my blackboard. We had this stuff that was dumped here, okay, from 1954 to 1970. And the promise was made in 1970, and he said we're going to get the alpha emitters and the high-level waste

hopefully out by the end of the decade, probably to Lyons, Kansas, as soon as we get the ball rolling on that.

Well, the people at this site immediately said, woop, that promise didn't pertain to anything before 1970. We're going to leave all that stuff there. We don't want that stuff to see the light of day ever.

Now, there's a lot of chemical things in those wastes as well as your radionuclides. Large amounts, I've heard, of mercury, beryllium, heavy metal contaminants that you don't ever want to see in the aquifer.

Well, our team, the Department of Energy -- well, the AEC, then ERDA, then DOE, immediately partitioned the waste and said, well, only the stuff received since 1970 that promise applies to. And furthermore, anything less than ten nanocuries per gram is low level and we're going to leave that here, too. So they've got, at least in my conceptual scheme, the wastes partitioned. And I've never seen an explanation of how much of the wastes that means that they mean to leave here in Idaho, but it's roughly a quarter segment of the stuff that I'm aware of.

MR. JOHN TANNER: Excuse me. You invited the interruption. Do you have a minute?

MR. REUEL SMITH: John, excuse me a second. A procedural question here. This is a formal comment period and, you know, when Mr. Donnelly concludes his

comments --

MR. TANNER: That's all right. I took him at his word.

MR. REUEL SMITH: I understand. But then at some point in time after the comment session if you people would like to get together and do some discussions here, that would be okay. But, you know, it would be appropriate to continue the comment for the record.

MR. DONNELLY: Mr. Tanner, do you have a question?

MR. TANNER: Well, I guess he's moderating it, so I'll ask mine afterwards.

MR. DONNELLY: Okay. I don't mind taking it now because admittedly these meetings normally constrain public commentary like mine to a five-minute thing in which you can address only one issue. I really usually feel limited by that. Here the DOE folks took an hour to describe their operations and answer our questions. And I'm admittedly taking longer than one normally takes for public commentary. Why not? This is our meeting, too, and I don't think that it should be regulated by these folks. We are the public. I wouldn't mind taking your question regardless of what Mr. Smith says.

Well, there is the business of partitioning the wastes such that big chunks of them will stay here.

And as far as I know, the other part of that promise -- and we are -- our site is unique in that we are the only recipients of such a high-level promise that I'm aware of from the chief federal operator of -- well, in this case, the chairman of the Atomic Energy Commission and the co-discoverer of plutonium promised us while he was sitting chairman of the Atomic Energy Commission that he was going to get these materials out of here. He knows a lot more than I know about the nature of these materials, but such a promise is, well, not to be forgotten, not to be forgotten.

As far as I'm aware, there is no meaningful motion to get those high-level wastes removed. Now, correct me if I'm wrong, but the high-level wastes of which he spoke is essentially the stuff that is submarine reactor wastes processed through the Chem Plant, stored as nitric acid solutions of very high specific activity, and then calcined to these powders that are in the bins up there at the Chem Plant.

And it has the embarrassing quality that the powders are very environmentally dispersible. They're not palletized or stabilized such that you can transport them. And the business of converting them to transportable -- safely transportable form is, to my knowledge, not being addressed. Nobody -- is anybody doing anything about the

high-level fraction of the wastes to get out of Idaho per the promise?

No. Well, okay. So we've got a quarter of the transuranics, you know, the alpha emitters, that they're a quarter, a conceptual quarter. And I don't know where these boundaries are.

But I'm no longer young. I'm a grandfather. And this has been going on for forty years or so, this disposal at INEL, and I just want to point out that -- and I'm seeing this already in some of the meetings that I come to here in Idaho Falls conducted by DOE employees who happen to be fairly youthful, that it's psychologically difficult for them to address the wastes that were left by their predecessors that -- okay. I would fully expect that unless we solve this matter in our lifetimes, why, there is going to be no action, and I doubt that our children will take seriously the obligation to clean up our mess. And that's unfortunate.

Okay. So this business of discussing the wastes at Pad A is a fraction of the quarter that they -- well, no, it's not. It's a fraction of the piece that they do not plan to move ever, I don't think. I would mention that that's only the current -- current proposal. It's like talking -- something to talk about. But obviously, from the fact that Pad A represents a very small fraction

of what our obligations are to safely address the materials even at the Subsurface Disposal Area, something's wrong here. Something's wrong here.

Obviously, we haven't yet figured out what to do with these wastes, and we're talking of leaving a relatively harmless fraction of them sit. And we address that with an environmental assessment that analyzes these wastes for a period of one thousand years.

Now, one thousand years is, of course, very short in respect to the half-lifes of the radionuclides involved. And I suggest that it is a farce to analyze things for one thousand years when it is known that they will be radiologically dangerous for a long time. The beryllium wastes, of course, will be forever toxic, and whatever other chemicals that are there are always going to be dangerous.

And what you have here is a polite assumption that there will be no tectonic activity. We are not going to have earthquakes shake the hell out of this pad. The cover's going to be intact for over a hundred years. That's not allowed, right? We will not have the Big Lost River come back through the site and wash it all into the aquifer directly. We will not have the volcanoes go off up there. Those are assumptions that are in this assessment.

In my mind, it is unconscionable and

unacceptable that we be given environmental assessment for these dangerous wastes that does not include the real geologic threats to the integrity of the storage area and analyze what will happen when those things eventually occur that will stir these things into the water supply in Idaho.

Now, I personally don't feel very threatened by these materials up there. I tend to agree with them that the volcanoes are probably not going to go off next week. However, that fails to address what I think our known responsibilities are in these matters. And I guess I'm going to say I'm insulted by that. I think that to read out their side of the problem -- and I've asked them -- it's in their book, too, it turns out -- that why do you address these things only for a thousand years. And they say, well, our models -- our models fail to be sufficiently accurate that we can accurately and conservatively predict the fate of these wastes beyond that time. It gets wildly inaccurate, and we just can't be inaccurate around here.

But, of course, it fails to address where the real impacts of these wastes are going to be, as we all know, from the alpha emitters and the high-level wastes -- Folks, don't forget the high-level wastes -- is when they get released to the water supply and perhaps the air when

the volcanoes start to go off and when the Big Lost River comes through. And when it comes through, it can come through pretty big.

Well, anyway, I just want to say that there's a lot that's missing here, a whole lot that's missing here. And these folks have had years to prepare this one and this one -- well, in my mind, it's comparable to the Asian countries dribbling out information about the war debt from our country that have been there for thirty years.

We've got a small fraction -- and I get angry at this. We've got a small fraction of the problem being addressed spread out now over twenty years since it became a public issue and publicly promised to remove this stuff since it became an action item in the AEC, DOE. It's been twenty years since then. Of course, it's been forty years since they started putting stuff in the -- in the waste dump out there.

And I am upset, but also formally I want to say it's unacceptable to me to see our region treated so crassly by the interests that will bring these materials here and then fail to clean them up when it's pointed out that they are not addressing the real problems that they are bringing here. We only have a hint, a clue of how important these wastes are when we say no, you can't bring

any more. You've seen that go by, and I think that the stress that's involved when they can't bring the wastes here shows you how important these matters are, shows you how important it is to find the proper solution as to what to do with these matters -- materials.

And I guess my conclusion from that is that the folks that -- that the folks that have been doing this, that have been conducting these affairs, are the wrong folks, that they really have not much interest and have shown that they have not much interest in cleaning the wastes up in a manner that will not threaten the entire water supply of the state of Idaho.

Where to go from there, I don't know. But this is only a clue. And, of course, because this is only a small part of the wastes at INEL, we are going to see these conversations go on for a long time. And there are many decisions yet to be made, but I suggest that the current stewards have shown over entire careers that they're not the people that are going to fix our problems.

That finishes my -- the first part of my formal testimony. I have more. But I would like to pause and take any questions and do what I can with them.

The second part of my commentary has to do with a description of the Radioactive Waste Management Complex in terms of how it got there, what it's like from

the point of view of the geology, the safety, the hydrology. We have experts in the room. If I misspeak, please let them correct me at once.

The Radioactive Waste Management Complex. Well, there's a portion of it.

MR. HULA: Actually, Dennis, that's --

AUDIENCE: Sanitary landfill.

MR. DONNELLY: Oh, that's not it.

AUDIENCE: It's close.

MR. HULA: Do you want it --

MR. DONNELLY: Sure. If you have a picture of it, that would be nice. I didn't bring mine. I don't have one.

I'll describe it in words. In the early '50s, the EBR-1 plant had a nasty accident. And as a result, they had -- as a result of the cleanup at EBR-1, they had some radioactive wastes to get rid of. Mostly beta gamma emitters. Not transuranics, not alpha emitters. Alpha emitters are the very long-lived ones. Alpha emitters are the ones that really get you if they get inside you.

But for beta gamma emitters, there was a real need for something to do with those wastes, and the geologists -- geologist at the site helped them choose a low-lying area out behind the EBR-1 plant where there is

more than a little bit of soil cover. There is more soil there in this low-lying area because it happened to be a former course of the Big Lost River and it's basically a riverbed.

I don't know. Is this the Big Lost River going by? No. Is it?

AUDIENCE: No.

MR. DONNELLY: It's miles away, isn't it? It's miles away and twelve feet uphill from the current level of the radioactive wastes -- the Radioactive Waste Management area, which is to say that it's only a precarious accident that that riverbed doesn't flow right through this thing. And it kind of wants to flow right through this thing. And the next time that the surface is changed by lava flows, it very well could flow right into this area again.

But what we have here is a large basin down to this area where snowmelt tends to collect and flow down to it, and they've cut into the soils and it's basically a hole in the soil where they put the waste. And in the early years -- in the early years, they used to scrape it right down to the lava rock and no soil underneath it. And so the fraction that was left prior to 1970 -- and in my reading, it's only after 1970 that they specifically provided a foot or two of soil underneath it to help stop

the flow of -- the percolation of these things down toward the water.

But basically it's like a large coffee percolator. You've got the grounds up there and -- well, potential threats of water intrusion from catastrophic events. An earthquake taking out the dam up at Mackay is one potential thing. They very actively prevent water from coming in it now.

Do they do snow removal really? Do they remove snow from this area in the wintertime?

AUDIENCE: Yes.

MR. DONNELLY: They do snow removal in the winter so that you don't see water intrusion as the snow melts. They have large dams and water diversion, kind of floodplain sorts of things, where if the Big Lost should flood, why, they divert it and keep it away. That's very active management. But this site requires active management because of its low -- you know, its lowness with respect to the Big Lost valley. And I guess what this suggests and what I suggest is that this place is obviously not suitable for a radioactive waste dump or a chemical waste dump.

What you're going to have in the unmanaged future is snowmelt, Big Lost, violating the polite assumptions that are made in the models that are shown to

you here today.

Now, as we go on to address the larger issues of what are we going to do with all the rest of the stuff -- I mean, this is a small fraction, right? I hope that these things will be treated more fairly, I really do, because we have a very threatened location. The next layer of threats, of course, is earthquakes and the Mackay Dam threatening the cover that's put over these things. And, of course, the final layer of threats -- yes, sir.

MR. JOHN HORAN: Dennis, I hate to interrupt you -- John Horan, for the record, H-o-r-a-n.

I find that your facts are very convoluted, that many of the things that you are saying -- in fact, I'll say from 40 to 50 percent -- are not correct.

MR. DONNELLY: Please address specifics.

MR. HORAN: I'd like to.

MR. REUEL SMITH: Excuse me, Mr. Horan. For purposes of the comment period, if you have information that you would like to enter into the record, that's your -- you can do that at your discretion. This purpose isn't to have interchange. It's to obtain Mr. Donnelly's ideas and suggestions for the agencies. The agencies will address a lot of these concerns in the responsiveness summary.

MR. HORAN: Okay. Great.

MR. REUEL SMITH: But you're very welcome, and members of the audience are invited and welcome to say what is on your mind in a similar manner that Mr. Donnelly is. And at some point in time, we may need to say -- we have another topic of discussion tonight. There may be other individuals who choose to make comments.

MR. GEORGE WEHMANN: There are, and I think it's unfair --

MR. REUEL SMITH: So we want to be fair.

MR. WEHMANN: -- for him to ramble on.

MR. REUEL SMITH: We want to be fair to everyone in terms of time.

MR. TANNER: I agree it's unfair for one person to have so much time.

MR. DONNELLY: No one else has asked for time. I will yield the floor if people want to.

MR. REUEL SMITH: Let's just preliminarily take a head count here. Who else would like to give comments in tonight's comment session?

Mr. Donnelly, is it fair to say another five minutes?

MR. DONNELLY: Okay. I note that I'm still ten minutes under the time that the DOE presenter had. Not that I want to prolong the meeting unduly. I have better things to do, too. But five minutes, is that okay?

I would appreciate your being specific because I want to learn, too. And for what it's worth, if you would like to be specific right now, I wouldn't mind. I'd like to learn because if I have misconceptions, I want to hear about them and be corrected. And I welcome that, as a matter of fact, because I don't -- I worry a lot about these things obviously.

MR. HORAN: I would rather follow the rules.

MR. DONNELLY: Okay. I'll continue.

MR. REUEL SMITH: One point for the record. In Pocatello on August 11th, a public open house was held at the INEL Outreach Office. The purpose of that forum is to allow the type of interchange that Mr. Donnelly is looking for. And it was -- you know, it's a fairly -- there's no restrictions and there's no guidelines. Members of the State of Idaho Division of Environmental Quality, the Department of Energy were there from 12:00 noon until 7:00 p.m. and even later than 7:00 p.m. But the idea is that we have several -- or a variety of opportunities for interchange and comments. The purpose of tonight's meeting is that formal comment.

So again, to reiterate something that was mentioned a while ago, if those of you would like to stay afterwards, after the comment session, we can make a portion of the room available after the Central Facilities

Area discussion to have a citizen discussion group. We could help facilitate that. But for now, if we could stay on the comments. So about another --

MR. DONNELLY: Just a brief response to that. The very reason I'm coming here and discussing my concerns with you folks is to meet people like Mr. Horan who can perhaps correct my incorrect notions at the Open House which I went to. I didn't find a whole lot -- in fact, I essentially told you of my disappointments in the level of the information that we got at the Open House. And in particular, I didn't -- I didn't find people like Mr. Horan who will correct me if I'm wrong, and I hope he does.

Just a little bit more about my history of the Radioactive Waste Management Complex is that it was initially okayed by the local geologist -- geohydrologist for purposes of beta gamma disposal. The business of introducing alpha wastes from Rocky Flats, Mounds Laboratory, and wherever else it comes from, was something that was above and beyond the initial okays that were given here, but those things had a place to go.

No one has ever, it appears, done a comprehensive environmental impact statement of what the long-term consequences of these materials will be. It's 40 or 50 years later, folks, and it's time to figure that

out. It's a whole career after these things were started. Most of the people that were involved are retired. Some of them are here tonight. We're failing to address the situation still.

I will stop -- I'll leave it at that. But the current course of events in terms of, well, let's leave this here and never dig it up and never worry about it is unacceptable to me personally. I just want to say that again and again. I've said it. Thank you.

MR. HULA: There are a couple of other gentlemen that want to provide verbal comments. Thank you, Mr. Donnelly.

It's been mentioned, please provide your name and spell it out for the court reporter. Thanks.

MR. WEHMANN: Yeah. My name is George Wehmann, W-e-h-m-a-n-n. And just a couple points I want to bring out relative to your accuracy.

You mentioned an accident at EBR-1. There was no accident, but there was a planned experiment, BORAX-1. That did indeed -- and, in fact, the biggest thing that it produced was some contamination very close in to the BORAX area which was ultimately chosen.

MR. DONNELLY: I said EBR-1. That's what I meant.

MR. WEHMANN: No.

MR. HULA: Could we allow Mr. Wehmann to state his comments uninterrupted, please?

MR. WEHMANN: I think you acknowledged, but I don't think you realize the effort that was put forth by the AEC and the USGS in the selection of that original 88 acres for the burial ground.

Now, the effect of the Mackay Dam failure was examined in the '70s, and I believe you can find the results of that in the Waste Management Operations Environmental Impact Statement.

Earthquakes, that's a favorite subject of mine because a woman in the League of Women Voters, who were at one time quite critical of us, wondered if we couldn't have an earthquake big enough to have a fault all the way down to the aquifer. And I simply asked her, as I will ask you, what do you think's going to be left of Pocatello and Idaho Falls when you have an earthquake of that magnitude?

But in the interest of time, I think what I want to simply say is that I'm obviously in a hundred percent agreement with the Preferred Alternative. But my reason for doing that is I happen to be the, I guess, founder of Pad A because at that time I was in charge of waste management for the AEC. So I support one hundred percent that one because basically what that one is saying

is continue with some engineered efforts to keep that area as it is, which was the intention from the beginning.

And if one looks at the risk of -- to the workers to remove the waste from there, you'll find that you've got a much greater risk than if you leave it alone. That's it.

MR. HULA: Thank you. John?

MR. HORAN: John Horan. I'm a little tired. I'm going to relax here, if you don't mind, and be very informal.

Dennis, I had no plans to make any comments tonight, but there were just too many things that you said that were half-truths or not truth at all that I think some focus has to be brought to them.

First of all, you talked about secrecy, you started out. There has always been secrecy in the national interest. There has never been secrecy as far as health and safety has been concerned.

I first appeared in 1959 before the Joint Committee of Congress and gave a full report on the waste management activities at the INEL. It's part of the open record. It was at that time. All the releases to the atmosphere, to the water, to solid waste, and it was couched in the best terminology that we had at the time, the best knowledge.

The AEC began in 1957 an annual report of its activities. These were put out consistently for a seven-year period. And in every one of these reports, there was an up-to-date information on the releases to the environment, on the accidents that had happened in the plants, and also on the exposures to the people on site. And I think it was perhaps in '59 that we started including in that report an annual report on releases to the environment which continues to this day under the RESL program.

Today what they're putting out is about a 200-page report. We at that time were putting out a two-page summary because we felt it should be something concise and something that the public could understand rather than all the science jargon that may be appearing in reports to this day.

In the early days at the site, our interest was focused on atmospheric releases because this has the most impact, the immediate impact upon the public.

The liquid waste releases or the potential of contamination of the aquifer was considered extremely remote. However, it was the focus of concern from day one for the Atomic Energy Commission.

George Wehmann mentioned about the selection of the burial ground. It was selected with the best advice

available in this country. And incidentally, we were the first peacetime site that was established. So we were able to benefit from the experiences of Oak Ridge, Brookhaven, and Hanford.

One of the first rules that was established was that there would be one burial ground as opposed to the multiplicity of burial grounds at each site location such as at Oak Ridge where I received my training, as well as up at Hanford. That site was selected because of its ideal -- the best location on the entire 900 square mile area and the distance to the aquifer, the availability of soil cover.

And by the way, waste was never buried, the ditches were never dug directly to the assault -- to the basalt. There was always the requirement that there be several feet of soil over the rock at the bottom. And in fact, the way the USGS selected the location -- and it was probed and there were plots made of the distance to the basalt, but we rarely had a difficulty in not having adequate soil cover.

It's interesting how history is totally forgotten. And I might mention this particularly for state people. We had in the early days an NRTS Advisory Committee, and the director of health -- of the department of health was a sitting member of that committee. We also

had a professor of radiology from the University of Utah. We had Dr. Taylor from the Idaho State University, the chairman of their nuclear engineering department, was part of it. We had -- the medical profession in Idaho Falls was represented. And a total of about ten people which met annually, and they could ask any questions which they liked. It was an all-day meeting. There was a formal program.

And my first knowledge of this was that I was at NRF in 1954, when of all places I represented NRF to make an unclassified presentation on the occupational exposure and the releases to the environment from the NRF facility. And, you know, this is the facility that to this day people are talking in terms of their being classified and not providing information.

I still have a copy of the outline of the talk that I presented at that meeting, because naturally I did have to have it approved by the Navy. But nothing was held back from the standpoint of our experience.

Dennis, I think you're right that there was an accident at EBR-1. It was -- EBR-1 did have a meltdown of some their fuel elements I think in about 1953, but no release to the environment. There was some waste generated from that.

What George mentioned was the intentional

destructive test of BORAX-1 just before the Geneva Conference in 1955. And that, by the way, was totally documented in the open literature.

I'm talking longer than I had intended. Waste has always been managed at an advanced level of the state of the art at INEL since 1951 when the first waste was generated, so the best practices and the best technology was taken from the other sites and applied.

With Jack Barraclough being in front of me, I have to mention to you that we never considered ourselves as AEC employees as experts in either the field of geology, hydrology, or the weather bureau. And in fact, George Wehmann was originally a weather bureau employee on the site. But we had gone to the best in the federal agencies to provide their expertise.

Something that a lot of people are not aware of was that when I first joined AEC in '57, I had an adviser on my staff from the U.S. Public Health Service, and this man was on my staff for about three years. I think that the reason that he was pulled back to Washington was that I was giving him too much responsibility and they were afraid that he was being used to make some of the policy decisions which I don't think the Public Health Service wanted to be involved in. But we had that much confidence in these people that we used them to the maximum

extent that we could.

Dennis, you also mentioned about one thousand years being too short a time. For some wastes, it is, when you're talking about plutonium. When it comes to the type of thing that's on Pad A, a thousand years is really too long a period of time.

And I have to get in a little plug here that the Integral Fast Reactor is a great blessing that we have that's on the horizon to take care of a lot of our plutonium waste problems.

And this I think indicates something to us that perhaps we, like the rest of the world, should not be in that much haste to solve some of these major problems in a very expensive way now. As long as there is no real threat to the environment -- and I'm saying environment is aquifer -- we should not be wasting these rare resources, namely tax dollars, on doing precipitous cleanup.

Concern was expressed about the volcano, and I'm of the opinion that perhaps the greatest thing that could happen to the buried waste on the site is for volcanism to take place and to cover it over. And I say that somewhat facetiously, but I say it somewhat seriously, too, because this type of thing, there have been occurrences like this in the past, not with any great frequency, thousands of years in between, but this would

isolate it once and for all. And I think after a little consideration, even the governor would be happy over the situation.

Well, basically those are the items that I thought might be of interest for the group. And if I can answer any questions privately or another time, I'd be happy to try it.

MR. HULA: Thank you. Do we have anyone else that would like to provide comments?

If not, I would like to thank you all for showing up tonight and have a good night.

(The meeting concluded at 9:05 p.m.)

REPORTER'S CERTIFICATE

STATE OF IDAHO)
) ss.
County of Canyon)

I, CAROLE A. WALDEN, a Notary Public in and for the State of Idaho, do hereby certify:

That said meeting was taken down by me in shorthand at the time and place therein named and thereafter transcribed by means of computer-aided transcription, and that the foregoing transcript contains a full, true and verbatim record of the said meeting;

I further certify that I have no interest in the event of the action.

WITNESS my hand and seal this 23rd day of August, 1993.

Carole A. Walden

CAROLE A. WALDEN, CSR
Notary Public in and for the State of Idaho, residing in Caldwell, Idaho.
My commission expires 10-21-93.

PAD A PUBLIC MEETING

Boise Public Library
715 South Capitol Boulevard
Boise, Idaho

August 18, 1993
7:10 p.m.

AGENCY REPRESENTATIVES

U.S. Department of Energy, Idaho Operations Office
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Alan J. Dudziak

EG&G Idaho
Vaughn Halford
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ORIGINAL

I N D E X

BOISE, IDAHO, WEDNESDAY, AUGUST 18, 1993, 7:10 P.M.

*****

MR. HULA: My name is Greg Hula. I'm the Department of Energy Project Manager on the Pad A project. I'd like to welcome everyone to the meeting tonight and thank you for taking the time to come out and hear what we have to say.

The purpose of tonight's meeting is basically threefold. One, we're going to give you an overview of the Proposed Plan and the alternatives that we evaluated for Pad A. Two, we'll have an informal question and answer session. If there's anything in the Proposed Plan or anything we talked about tonight that's not clear that you have questions on, feel free to ask us, and we'll provide answers. And third, we'll have a formal verbal comment period, allow you to come up and provide formal verbal comments on the Proposed Plan.

We do have additional copies of comment forms, also additional copies of the Pad A Proposed Plan on the back table in the room. For those of you who would like to provide written comments, these forms are pre-addressed to the Department of Energy and they're already prepaid. So all you need to do is write your

comments down, drop it in the mailbox, and we'll be sure to get it and respond to that.

I'd also like to point out that we've got -- on the back of the agenda, there's an evaluation form. I'd like to encourage you to take a couple minutes, give us some feedback on how the meeting went tonight, how you thought it went, things we might do better the next time around to make the meetings more informative for you.

I would also like to point out that we do have a court reporter here tonight who is taking an official transcript of the entire meeting, including presentation, the Q and A session, and the formal verbal comments. Our purpose for having the court reporter is to ensure we have an accurate record of the meeting.

Once again, welcome. And following Pad A's meeting, Alan Dudziak of the Department of Energy will be giving a quick overview of the status of activities of the Central Facilities Area Landfill which is also at the Idaho National Engineering Lab.

With that, I'd like to introduce Dean Nygard with the State of Idaho Department of Environmental Quality, and Mary Jane Nearman with Environmental Protection Agency out of Seattle. As you know, the Federal Facility Agreement implemented at the Idaho National Engineering Lab is a tri-party agreement between the State

of Idaho, DOE, and EPA.

With that, I'll start off here. The Idaho National Engineering Lab is an 890 square mile facility located in this portion of Idaho. There are several facilities throughout the lab, the one of which is of importance to us tonight being the Radioactive Waste Management Complex, or RWMC, located in the southwest portion of the INEL.

The Radioactive Waste Management Complex was opened in 1952 for the disposal of INEL-generated low-level radioactive wastes. In 1954, other DOE facilities, for example, Rocky Flats Plant in Colorado, began shipping their wastes to the RWMC also.

There's basically two main portions of the Radioactive Waste Management Complex. One is this 56-acre -- and it's kind of cut off here. I apologize for that picture. But the 56-acre Transuranic Storage Area, and this area was opened in 1970 for the aboveground storage of transuranic wastes. Transuranic radioactive wastes are basically wastes generated at the Rocky Flats Plant from the production of nuclear weapons.

Next to the Transuranic Storage Area we have the 88-acre Subsurface Disposal Area commonly referred to as the burial grounds. This is where the waste was dumped in pits or trenches, covered with soil, and basically the

radioactive wastes were buried. Within the Subsurface Disposal Area, we have Pad A. It's in the north central portion of the SDA.

I'd like to introduce Mr. Vaughn Halford with EG&G Idaho, contractor to DOE, who's going to provide some information and details on the wastes on Pad A.

MR. HALFORD: Thank you, Greg.

Good evening. Pad A was constructed in 1972 for the aboveground disposal of radioactive containerized wastes. The waste containers, which consisted of 55-gallon drums and four by four by seven boxes, were placed on a three- to four-inch asphalt pad which is laid on top of at least three inches of gravel.

The containers, once the pad was closed, was covered with three to six feet of soils and then seeded with a crested wheatgrass to attempt to minimize erosion. The boxes and drums in some areas were covered with plywood and some areas with plywood and polyethylene covering. The arrangement of the boxes and drums indicated here and you can see its location in that north central portion of the Radioactive Waste Management Complex.

The wastes disposed of on Pad A -- I'll give you another photo here that gives you a little better picture of the actual waste as it was in 1978 prior to closure. The wastes disposed at Pad A in these drums and

boxes were all solid wastes. These wastes consist of evaporator salts, which are those nitrate salts that I think Greg mentioned, that came from the solar evaporation ponds at Rocky Flats. Also from Rocky Flats Plant, we have some uranium oxides, beryllium foundry and machining wastes, and some dry sewage sludge. Also placed on Pad A were miscellaneous INEL-generated wastes. The Rocky Flats Plant salts comprise about 71 percent of the wastes disposed of on Pad A.

We have a really clear picture of the types of wastes on Pad A, the concentrations and how they were disposed, from our disposal records and shipping records from the Rocky Flats Plant. Additionally, we have talked to the processing facilities that produce these wastes and the operators that work there and, from that process knowledge, have a really good picture of those wastes.

Two investigations have been done in the past at Pad A, one in 1979, one in 1989. The '79 penetration project simply came in and removed dirt from the northeast corner of the pad to expose a row of drums along this corner. The 1972 drums were placed here, so these are the oldest containers at that time. And that was done to see what the condition of those containers were after seven years of burial. They found that the drums were intact and the boxes were showing various stages of deterioration.

In 1989 -- I think you may have seen the white enclosure that was placed on top of Pad A -- they actually went in and penetrated in the south region of the pad and were going in to retrieve several drums. They retrieved one drum from this location, and we took that drum to the Transuranic Storage Area after it was overpacked or put in another larger drum, and stored there for two years.

In 1992, we went back and retrieved that drum, opened it up, and we're going to sample and analyze the contents. The nitrate salts that we found in the drum very closely matched the inventory or the sampling and analysis records that Rocky Flats had indicated for the contaminant types and concentrations. So the analysis that we did confirmed what Rocky Flats said they had sent to us.

Past monitoring at Pad A that has gone on since 1978 when the pad was closed has included taking surface soil samples any time there's any surface water available, continuing to monitor groundwater around this Pad A and around the RWMC, and additionally taking air samples out at the Radioactive Waste Management Complex. The indications from that sampling is that there's no contaminants attributable to Pad A that have left the site.

With that, I'd like to turn it back over to Greg and have him discuss our investigations.

MR. HULA: Okay. Once we identified the types of wastes that were on Pad A and the types of contaminants that were in those wastes, we had to -- the next step in the process was to try and determine what problem those contaminants could pose now or potentially in the future to people and the environment.

We do that by conducting a baseline risk assessment, basically evaluate potential risks both now and in the future assuming no action is taken at the site. The baseline risk assessment allows us to identify which contaminants pose the risk, and it also allows us to identify how people could be exposed to those contaminants. Just because you have contaminants doesn't mean that there's a risk. Those contaminants have to come in contact with people to have a risk.

For Pad A, we assumed that burrowing animals could dig into the waste and bring contaminants to the surface. We also assumed that plant root systems could take the contaminants up. When those plants die, the contaminants were then at the surface of the cover.

Once the contaminants are on the surface, people can be exposed to the contaminants by breathing air contaminated with -- well, air that contains contaminated

dust, eating contaminated soil, or through direct radiation from the radionuclides on the soil.

Similarly, once the contaminants -- we assumed a certain amount of water moves through these wastes, dissolves the wastes similar to like table salt dissolves in water, and that water moves down to the groundwater with the contaminants in it. Once in the groundwater, people can be exposed to the wastes by drinking the contaminated groundwater. And we assumed in the future somebody might be living at Pad A, and so we assumed that they could use -- they would use this contaminated groundwater to irrigate their food crops, and in eating those food crops, they would be exposed to the contaminants.

In order to evaluate how much of the contaminants can move from the pad to the surface or from the pad to the groundwater, we relied upon computer modeling. Basically it's just -- the computer modeling we do is a mathematical code that kind of simulates how the contaminants can move from here to here or from the pad to the surface.

Because there's a lot of unknowns about the site itself and how contaminants might move in the ground below the pad, we used conservative assumptions in the modeling. For example, in order to get any contaminants

down to this groundwater, the contaminants have to be available to move. Right now, as Vaughn mentioned, the wastes are in plastic liners and in drums and in boxes. We assumed, because we don't know how long those plastic liners and the drums will remain intact -- they could remain intact for ten, fifteen, fifty years or longer. Because we don't know how long they'll remain intact, we assumed that a little over half of the waste or 56 percent of the waste was not in any container and could move right now.

Similarly, because these are solid wastes, in order for the wastes to get to the groundwater, you have to have water moving through the wastes and dissolving the wastes, and carrying them downward. We don't know specifically how much water infiltrates into this waste every year. By infiltrating, I mean if it rains, you're going to get a certain amount of water that runs off the surface of the pad. Some of it's going to evaporate, quite a bit will probably evaporate, and some will be taken up by the root systems, by the vegetation that's on the cover. Whatever's left over is the amount of water that infiltrates into the waste.

Because we don't know how much -- specifically how much water infiltrates that waste, we assumed two inches per year or five centimeters per year

was moving -- five centimeters per year of water was moving into the waste. Based on studies conducted a couple of years ago outside of the RWMC, infiltration rates in --

AUDIENCE: Excuse me. What's the RWMC?

MR. HULA: I'm sorry. That's the Radioactive Waste Management Complex.

AUDIENCE: Thank you.

MR. HULA: Pad A is located within the boundaries of the Radioactive Waste Management Complex.

I lost my train of thought. Based on studies conducted outside of the Radioactive Waste Management Complex a couple years ago, the infiltration rates in undisturbed areas are on the order of one centimeter per year or about one-fifth of the amount of water we assumed was infiltrating here.

Once the water infiltrates the waste, it has to move down to the groundwater. We don't know how much water or how far the water moves. We don't know if it goes down ten feet or if it goes down to this 100-foot interbed, or if it goes all the way down to the groundwater.

We assumed that this two inches of water, once it moves through the waste, it moves down to the groundwater in one year. And we continue moving that two inches of water through the waste down to the groundwater every year until there's no waste basically left on Pad A.

Given the conservative assumptions we used in the modeling, the overall result is that it tends to overestimate the potential concentrations of contaminants down in the groundwater. The reason we use the conservative assumptions is to ensure we have a margin of safety in our assessment to ensure we're making the right decision.

Using the concentrations of contaminants in the groundwater, we assessed the risk from Pad A to people for a period of one thousand years from now. Basically we assumed for the next hundred years that DOE would continue to remain on the site, control access to the site, prevent access. But after that one hundred years was over, because of the uncertainties associated with future land use at the INEL, we assumed DOE was no longer at the INEL, that anybody could live anywhere on the INEL. So we assumed families would be located at the Pad A boundary, the boundary of the Radioactive Waste Management Complex, as well as the INEL boundary.

Using those assumptions and the results of the modeling, our risk assessment showed no current risk to workers, the public, or the environment from the contaminants on Pad A. The only future risk is based on a family living at the edge of the Pad A boundary at the same time the nitrate concentrations reach their peak -- the

nitrates reach their peak concentration in the groundwater, which occurs about -- well, based on the modeling, in about 250 years, and that assumes that these people are basically drinking that nitrate contaminated groundwater. The peak concentration of nitrates at this point in 250 years was shown based on the modeling to be about 112 parts per million. The drinking water standard -- just to put it in perspective, the drinking water standard for nitrates is ten parts per million.

We didn't show -- the risk assessment showed no unacceptable risk to the family at the Radioactive Waste Management Complex boundary or out further. The reason for that is by the time the nitrates move from here to here, they're diluted to concentrations low enough that there's no risk to the family. Similarly, in addition, the risk assessment showed no risk from the radionuclides in the groundwater or no unacceptable risk from the surface pathways.

The results of our risk assessment, the hypothetical case, what could potentially happen in the future, were then taken, and we used those against a reality check of what we know about the site right now and about the assessment we did. We used the conservative assumptions to err on the margin of safety, and conservative assumptions basically result in overestimated

concentrations of contaminants in the groundwater. We believe, if and when the nitrates move from Pad A and reach the groundwater, actual concentrations will be much lower than what our modeling predicted.

Similarly, based on those conservative assumptions and the overestimates, the fact that the modeling tends to overestimate the concentrations, we believe the existing soil cover on Pad A is a protective barrier to both the groundwater and the surface pathways if maintained. Also, we have, based on several years of monitoring and sampling data, no indications that contaminants have left the pad up to this point in time.

Based on this information, we evaluated alternatives in our feasibility study that ensure a cover is maintained over the wastes on the pad. As such, we evaluated a containment alternative, and this alternative basically evaluates -- or would construct an entirely new cover system over the existing soil cover on Pad A, and that cover system would include rock layer, a soil layer, a layer of sand and clay, and then would be revegetated and maintained over time.

An option under this containment alternative includes possibly using a geosynthetic or a geomembrane liner in addition to these other materials. With this alternative, we would continue to monitor groundwater, air,

soil, and surface water to get an early indication of any potential contaminant migration or movement from the pad.

The second alternative we looked at, Limited Action, is our Preferred Alternative. Based on the results of our risk assessment, we believe the existing cover is protective of the groundwater and surface pathways. What we would do under this alternative is basically continue maintaining the existing soil cover on the Pad A wastes, go in and recontour that cover to better enhance surface water runoff, revegetate it, and then maintain it to prevent surface erosion and correct for subsidence events.

As with Alternative 1, we would continue monitoring groundwater, the air, soil, and surface water on the pad. And the State of Idaho Department of Environmental Quality, Dean's group, and EPA, Mary Jane's group, would independently evaluate and review this information from the monitoring data, basically independently review the monitoring data to ensure continued effectiveness of the cover, the existing soil cover. Also, under both of these alternatives, DOE will continue to maintain or control access to the site for the next one hundred years.

Under the Limited Action alternative, we would, based on a couple years' worth of monitoring data,

reevaluate the Record of Decision on the pad in two years and then every five years thereafter.

Also, I'd better touch on this real quick, the No Action Alternative, as required by the CERCLA regulations, Superfund law, the No Action Alternative was carried through the feasibility study for comparison purposes between our two action alternatives.

We've basically given you an overview of Pad A and the types of wastes and contaminants on the pad, an overview of the risk assessment, and an overview of the alternatives we evaluated for Pad A.

What's next? Well, we'll be accepting comments tonight, verbal comments. Written comments will be accepted through August 26th. At the end of the comment period on August 26th, we will begin developing responses to those comments, to all written and verbal comments received, and those responses will become part of the Record of Decision for Pad A, which we anticipate signing in early 1994.

I'd like to open the floor to any questions that anyone might have.

AUDIENCE: Are we dealing with radioactive isotopes here, this waste material?

MR. HULA: Yes, there are radionuclides in this waste.

AUDIENCE: And what's the half-life?

MR. HULA: It depends on the radionuclide. The plutonium that's on the -- the plutonium that's on the pad, plutonium-239, for example, has a half-life of 24,000 years. The uranium is primarily I believe -- uranium-238 isotope, I believe the half-life of that is four billion years, Bob?

MR. NITSCHKE: Billion years.

MR. HULA: Four billion years. Very long. The plutonium and the uranium tend to be very long-lived radionuclides.

AUDIENCE: Okay. Do you have -- have you installed monitoring devices which are computer monitored, in other words, where you could put like the old Geiger counter and it could relay information to a computer center so that you could have a virtually one hundred percent 24-hour monitoring system in place?

MR. HULA: No, we haven't done that.

AUDIENCE: Has anyone thought about that?

MR. HULA: I'm not sure that's been thought about actually. I don't think so.

AUDIENCE: Well, you might want to think about that.

MR. HULA: What we do is -- the monitoring we do at the Radioactive Waste Management Complex is primarily

soil sampling.

AUDIENCE: We saw how you did it. I think that's fine. I'm just saying that --

MR. HULA: Point well taken.

AUDIENCE: -- looking back in a hundred years, not much happened. We had a couple world wars and some earthquakes and some other things. We really didn't have any major cataclysmic events. But we just don't know in the next hundred years.

The other thing who is doing R&D on accelerating half-life?

MR. HULA: I don't know. I'm not sure you can accelerate half-life given that it's a physical -- it's a physical property of the radionuclide itself. I don't know if you can accelerate it or not. I don't know that anyone is looking at accelerating half-lifes.

AUDIENCE: Well, you might take a look at finding out if any research is being done on accelerating half-life, and I think it is a -- I think it is a nuclear molecular possibility that we can do that. You know, I don't know if the Super Collider will give you any information on that or not, but I think that should be looked at.

MR. HULA: I think that sure could be looked at, too.

AUDIENCE: Another thing, is there any practical utilization of this material?

MR. HULA: The uranium -- the nitrate salts may have application as a component in fertilizer or something, but it would be dependent upon the ability to remove the radionuclides in the nitrates. We really didn't evaluate that. We didn't evaluate removing the wastes or recovering it for potential other uses.

AUDIENCE: Are we spending a lot -- very much money on, you know, this monitoring and reviewing and so forth? I don't understand -- you know, it's like Dirksen used to say. A billion here, a billion there, and pretty soon it's real money. And so I don't have a relationship of cost value return on a societal basis extrapolated in a computer model over 250 years when a guy gets to live there. But we might take a look at some, you know, cost benefits and get an idea of that because you're not going to be around doing this then, you know, poking in there all that long.

And the other thing is encapsulation. It would seem to me we probably have some materials now available that if you wanted to, you could encapsulate this relatively inexpensively with virtually no penetration. I mean, it seems to me, you know, you could take silicone and create silicone blankets and wrap this stuff up, and that

stuff is impervious to an awful lot of things, you know. It's flexible. It has a very high temperature resistance, moisture resistance, and so forth. You might take a look at that on a cost return basis.

MR. HULA: That's kind of -- you know, the kind of comments we're looking for tonight.

AUDIENCE: You got all you're going to get.

MR. HULA: One of the other alternatives --

AUDIENCE: I've got to go see my wife.

MR. HULA: Well, could I get you -- before you leave, could I get you to write that down. Talk to Reuel.

Real quick. For other questions, we do have these little three-by-five cards if you want to write a question down. It'll get brought up and we'll respond to the question.

Fritz.

AUDIENCE: I was curious how the wastes were considered for monitored retrievable storage, whether that was -- obviously, you know, subsurface disposal is not the best way of doing things in that we don't know what's going to happen with the waste over a period of time.

MR. HULA: No, we didn't consider the retrievable monitored storage -- or monitored retrievable storage basically because we're not looking at -- we didn't

consider retrieving that waste from the pad and placing it in different storage configuration. There again, I think that's definitely a comment that could be provided.

AUDIENCE: So those wastes would not -- even the transuranic components would not be considered for, say, the Waste Isolation Pilot project or other methods of disposal? We're saying basically we're going to keep it here and keep an eye on it?

MR. HULA: That's correct. That's right. And primarily the reason is because this waste is low-level waste. It doesn't meet the criteria for transport -- or disposal at WIPP. There are only two drums that meet that criteria out of 18,000. So, no, it wouldn't be destined for WIPP.

AUDIENCE: And then just a final question would be, would the risk of moving -- or removing, I should say, the waste that exists there and repackaging it or, you know, doing whatever, would that increase the potential of risk to people and others?

MR. HULA: We didn't evaluate that specifically, but my gut feeling is if you go in and start digging it up and that, whenever you start handling things, you're increasing the probability of something happening. So my gut feeling would be that it probably would pose a little more risk. How much more, I don't know. We didn't

-- we really didn't evaluate that.

Other questions anyone?

AUDIENCE: Is this considered mixed waste? Is there any hazardous materials in here in addition to the low-level?

MR. HULA: There are some -- the drum that was sampled in '89 -- to answer your question, yes, there are some other hazardous materials in there. I believe that --

MR. HALFORD: The nitrates themselves are.

MR. HULA: The nitrates themselves are considered hazardous under DOT regulations, but we also in that one drum of salts picked up some chromium. It was pretty small quantities, but that's still considered a hazardous material. And I believe that was the only one, if I remember right.

AUDIENCE: What's the condition of the pad itself, the asphalt pad? I don't think you mentioned that.

MR. HULA: We don't know what the condition -- the question is what's the condition of the asphalt pad. We don't know what the condition of the asphalt pad is under the waste.

The condition of the asphalt pad that has no waste on it is just about like this today. It really hasn't shown any significant signs of deterioration. As

far as the asphalt pad sitting under the waste, we don't know.

For the modeling, maybe it's important to point out, we didn't take credit for the asphalt being there in modeling or predicting how much of the nitrates could move to the groundwater. We assumed the asphalt pad wasn't there.

AUDIENCE: Okay. Good point.

MR. HULA: Yes, sir.

AUDIENCE: Well, I just had the other question. You know, the site has had flooding problems in the past. Is there any berming or other work that has been done or is potentially going to be done to prevent flooding?

MR. HULA: Yeah, there is. As you may know, we've had three floods out there. What's been done -- this is Pad A and this looks out to the west and the southwest. There's ground areas out here what we call spreading areas. And what you see out here is a dike that runs for quite a few miles south, up north, and the intent of all this is to divert the Big Lost River when it floods, to divert it around the RWMC.

We also have a dike or a berm, if you will, specifically around the Subsurface Disposal Area and ditches outside of this berm to divert any water that may

make it through the dike if there's a breach or something, divert that water also around the SDA. And then that kind of picks up with -- the Big Lost River comes out this way. This is actually here. And it ties back into the Big Lost River a couple miles away.

Don.

AUDIENCE: Yeah, I have a question, Greg, for you. The alternative that you have, Preferred Alternative?

MR. HULA: Yes, what we have identified as our Preferred Alternative.

AUDIENCE: It seems to me that that's the bare minimum, and I'm wondering what criteria you've used to choose number 2 over number 1. It would seem to me that the only criteria I can see that at least looks obvious would be saving money in choosing number 2 over number 1. Is there something I'm missing here?

MR. HULA: Yeah. Number 1, it's not the bare minimum. I think the bare minimum would be No Action.

AUDIENCE: I'm saying very close to the bare minimum. There's not a lot of action. Just maintaining erosion -- preventing erosion from happening. That's important, but it seems to me that we could go a lot further than that to --

MR. HULA: Outside of cost, the Limited

Action is much easier to implement, short-term effectiveness and that. It's easier to implement. We don't have to bring a bunch of materials in from across the state or out of state, for example, the clays and things like that. The soils we're talking about for maintaining the existing cover are basically taken from right out in this area. That's the one -- those are the two that come to mind.

AUDIENCE: So it's the expense --

MR. HULA: It's just easier to implement.

AUDIENCE: The expense and the fact that it can be done quicker?

MR. NYGARD: We need to point out the risk, that no appreciable reduction of risk by going with one alternative over the other. That's first and foremost.

AUDIENCE: Could you say that one more time?

MR. NYGARD: It's important to note in the risk assessment, there was no appreciable reduction in risk by going with other alternatives over the Preferred Alternative. That's one of the first and foremost things that we look at is that the alternatives that we carry through for further evaluation, things such as cost and the ability to perform the task, the short-term, long-term implementability and those kinds of factors, first the remedy has to be protective of human health and

environment. Otherwise, we carry a wide range of alternatives. Some of those may not even be protective of human health and environment. The law doesn't allow us to do that.

First and foremost, it has to meet state and federal law. The second thing -- first and foremost, protective of human health and environment. The other thing is meet state and federal law. So those are the two things.

MR. HULA: The bottom line, Don, is the one slide I had up here, the existing cover -- based on our risk assessment, the existing cover is protective of the groundwater and surface. And what Dean is getting at is the containment alternative, Alternative 1, affords no -- there's no --

AUDIENCE: That does not enhance --

MR. HULA: -- significant difference.

AUDIENCE: That does not enhance protection; is that what I'm hearing?

MR. HULA: Basically.

MR. NYGARD: That's correct.

MR. HULA: There's no significant difference.

AUDIENCE: So what would enhance protection aside from Alternative 1 and 2? Has there been any identification of what that would be?

MR. HULA: None that we evaluated.

AUDIENCE: What do you mean by enhanced protection?

AUDIENCE: Well, containing the contamination of the waste itself. I mean, the point is to protect it from seeping into the groundwater and the aquifer, correct?

AUDIENCE: Right.

AUDIENCE: So it would seem to me that there must be something that could be done above and beyond just improving or maintaining or preventing erosion from taking place. Certainly you've discovered some other means aside from Alternative 1 and 2 to protect the site from becoming a source of pollution in the aquifer.

MR. HULA: We don't believe it's going to be a source of pollution. And the monitoring that we're going to continue to do, if we see that stuff leaving Pad A, migrating down towards the aquifer at some point in the future, we definitely will be reevaluating what to do with Pad A.

AUDIENCE: I don't want to sound dumb here, Greg, but it seems to me that if it's not a problem, then why are we here tonight? Let's assume that there's a potential for a problem in the future and that future may be two hundred years down the way.

MR. HULA: As I mentioned earlier, the potential problem we have with this cover is the potential for it to erode over time and, therefore, expose wastes to the surface. So we're looking at alternatives that maintain a cover on that waste.

AUDIENCE: And the soil cover that currently exists is the best means of protecting --

MR. HULA: Given the criteria we looked at, yes.

AUDIENCE: But that's a question -- let's hear what the criteria are. I mean, one could take different criteria and come up with a different solution.

MR. HULA: Mary Jane.

MS. NEARMAN: Well, the criteria that we evaluated, the Superfund program, the two criteria that we are referring to, of course, are compliance with federal and state regulations and long-term protectiveness and effectiveness in the two alternatives, the two containment alternatives of soil, be it existing soil or these different layers of soil, that you would apply under the other containment alternative for equal long-term protectiveness and permanence.

The other balancing criteria, if you will, that you look at the alternatives relative to one another are cost, implementability, short-term effectiveness,

community --

MR. HULA: Short and long-term effectiveness, cost.

MS. NEARMAN: Long-term effectiveness and the state --

MR. HULA: State and community acceptance.

MS. NEARMAN: State acceptance. I'm sorry. So those are the other criteria that are evaluated. Once you find alternatives that pass those -- it has to provide long-term effectiveness and permanence and it has to comply with federal and state regulations. Then you apply the other ones.

AUDIENCE: The last one you mentioned, has that been ascertained as to whether the community --

MS. NEARMAN: No. Right.

(Unreportable three-person discussion was had.)

MS. NEARMAN: -- throughout the community throughout the public comment period, looking -- if there's new information, what the comments are from the public.

AUDIENCE: I have a question. Go ahead.

MR. HULA: Don, did that answer your question?

AUDIENCE: Yeah, for now.

MR. HULA: Okay.

AUDIENCE: Have you figured out the amount of pressure being put on those top -- those bottom drums there from the upper layers, how much pressure is actually put on those drums and the condition the drums are in?

MR. HULA: I don't believe we've evaluated or done any calculations to estimate how much pressure is being put on the drums right down here.

AUDIENCE: You said you had taken some drums out of there and tested them and they were in good shape, but yet we don't know what's occurring at the bottom part of that pile from the pressures from the upper part plus the earth and materials that's been put on top of it.

MR. HULA: That's correct. We do know the one drum that was retrieved in '89, and the drums we looked at in '89 were basically the first couple layers of drums.

AUDIENCE: I've been there, yeah.

MR. HULA: We don't know what the condition of the drums are down here. But there again, if we go back and look at our modeling, for risk assessment purposes, we assumed that the boxes and the plastic liners in the boxes, which constitute about 56 percent of the waste, that stuff could move now, right now anyway. So I think we -- in a way, we took that into account not understanding what the condition of the containers or the plastic liners are.

MS. NEARMAN: And assuming that the drums

failed, catastrophic failure in a hundred years of the drums as well. We actually assumed catastrophic failure of the boxes at the time that they were placed back in 1979.

MR. HULA: In 1972.

MS. NEARMAN: Yeah, '72.

MR. HULA: What we try to do is take that kind of issue -- that's one of those uncertainties and unknowns I was talking about early on in the discussion. So we tried to take that uncertainty and unknown and make a conservative assumption to account or compensate for that unknown.

AUDIENCE: Is the groundwater monitoring being done by existing monitoring wells or have other wells been put in place to accomplish this?

MR. HULA: Basically existing groundwater monitoring wells. There's a network of 20 or 25 wells in and around the RWMC that monitor the groundwater. Those are INEL wells. And then the United States Geological Survey, USGS, also has several monitoring wells around the Radioactive Waste Management Complex.

The monitoring for groundwater that we're talking about, we would basically evaluate the location of the existing wells, and if they're basically shown to be usable, in the right location and that, to continue giving us the right information, we're looking at using existing

wells rather than drilling new ones.

MR. NYGARD: Greg, I think it's important to point out that last year six wells were installed for purposes of investigating the RWMC, so there are additional wells going in. There will probably be additional wells going in in the future, so we're taking that into account. That's under another investigation at the Radioactive Waste Management Complex dealing with the organic contamination that I believe we talked about that in our Pit 9 discussions. If I recall, you were at those meetings. So that's happened as well.

AUDIENCE: Given the characteristics of the waste, you would be able to note with the existing monitoring wells whether the waste was originating from Pad A and not from some other source?

MR. HULA: For the nitrate salts, I think that's probably true because Pad A contains virtually all the nitrate salts in the Subsurface Disposal Area. For other contaminants, it's not quite that easy because of the other buried waste.

You had a question, ma'am?

AUDIENCE: Yeah. Do you do risk assessments only on the isolated sites or have you done one big risk assessment for all of the wastes?

MR. HULA: That's a good question. To date

we've only done risk assessments, for example, on Pad A. In two years we're going to begin looking at this entire area as a whole under what's called the SDA Pits and Trenches Remedial Investigation and Feasibility Study. And it's basically to get the big picture look at the risks posed for this entire site.

AUDIENCE: Because it seems to me like it's quite difficult to say there's no risk when you're only looking at an isolated point and not at all of the possible contaminants that could be migrating down to the aquifer.

MR. HULA: That's a good point, and that's why we are in about a year and a half to two years going to start looking at this entire site.

MR. NYGARD: Actually, if I could, we've started -- we have a risk assessment that's being developed right now to deal with the organic contamination coming from those TRU pits and trenches, so that's ongoing. There is some preliminary work that's going on in risk assessment as far as, as Greg mentioned, prior to that two years to give us a better idea of what's going on in terms of risk to guide us in some of our investigation strategy out at the RWMC. So there is a lot of risk assessment and risk evaluation ongoing right now in preparation for the comprehensive remedial investigation for the entire RWMC which will be started here in the next couple of years.

MR. HULA: Two years.

MR. NYGARD: And we'll have a Record of Decision on that I believe by 1998. It's a lengthy investigation and we're doing it in pieces, but we will evaluate the whole, as we will also evaluate the risk reduction for the entire INEL by the year 2000. So we're going to take those pieces, we're going to add those up and take a look at the risks and make sure we didn't miss anything. If we missed something, we go back.

AUDIENCE: I guess I'm curious as to why you're not looking at the whole in the first place.

MR. NYGARD: Because -- that's a good question. One of the important points we need to realize here is that first we need the data and the information and the problem defined. And we focused on certain areas in the Federal Facility Agreement. I don't know if you have a copy of that. Perhaps Reuel could point that out.

Of the various areas at the INEL, there's approximately 360 different sites that have been categorized and grouped for the purposes of performing risk assessments, so we are looking at those areas. They're at various stages of investigation because we can't do everything all at once. There's not enough people and not enough money to do that. So we set up a long-term strategy to arrive at where you're heading by the year 2000.

Has that helped, or have I just confused you?

MR. HULA: The reason Pad A --

AUDIENCE: It just seems -- as I stated, it just seems difficult for me to sit here and say, okay, there's no risk when you're only looking at Pad A. Yeah, maybe you're right for Pad A, there isn't, but when that is added into everything else, what's the result?

MR. NYGARD: You're entirely correct. And Pad A is the focus for this meeting, but at the same time we want to keep you informed of what the whole is. It's important to understand that.

AUDIENCE: Thank you.

MR. HULA: You're welcome.

Other questions? Did anybody have any written questions on the little three-by-five cards that haven't made it up here yet?

If no other questions, I'd like to recommend we take about a 15-minute break and we'll come back and accept formal verbal comments at about 8:15. Thanks.

(Recess taken.)

MR. HULA: I know we have a couple of folks who are interested in providing verbal comments. I have to apologize, we don't have a mike system here tonight, so when you come up, please speak up. The court reporter will

get everything down that you say. When you come up, I'd ask that you state your name and also spell your name for the court reporter so we have an accurate transcript of who came up.

Also, I'd like to ask that we limit -- or that you limit your comments to about five minutes if possible to ensure that everybody who wants to come up and provide verbal comments has an opportunity to do so.

With that, I know Fritz --

MR. FRITZ BJORNSEN: Yeah, I had some comments. I'm wondering, is it necessary to actually come up? I have no problem with that but, you know, it's a --

MS. HEMPHILL: It's okay to sit there. The problem is that the court reporter really needs to be able to see you and hear you clearly. So as long as you're in direct line of sight and somewhat facing her to help her so we get the transcript correct.

MR. BJORNSEN: I can do that. One of the comments I have is that I think this might be an ideal --

AUDIENCE: Give us your name, Fritz.

MR. BJORNSEN: Fritz Bjornsen, Boise.

AUDIENCE: Spell it.

MR. HULA: Spell that last name.

MR. BJORNSEN: B-j-o-r-n-s-e-n.

I think that Pad A would be an ideal

candidate for monitored retrievable storage, that we have a situation here that we can deal with this waste without assuming it to be buried and untouchable. I think that given that it was originally put on an asphalt pad indicates maybe that there were some concerns about the nature of the waste in the first place, that the barrels, the wooden boxes, this sort of thing, obviously are not meant for the long haul and could be either somehow reinterred, if that is what we decide is the best way, or at least monitored in a different manner.

I think that given the -- you know, the problems at the site, we haven't looked at all the alternatives, particularly some of the alternatives that have been brought up with other waste areas at the site, that some of the solutions that have been proposed for them might also be proposed for Pad A.

I think we need to look at and perhaps propose some other alternatives besides the three that have been proposed here.

That's pretty much all my comments at this point. Thanks.

MR. HULA: Thanks. I believe Mike wanted to come up and give verbal comments. State your name and spell it, please.

MR. MIKE USHMAN: That's Mike Ushman, Emmett,

Idaho. That's U-s-h-m-a-n.

I have went over the papers that were given to me, and out of the two alternatives, I find faults with both of them.

Number one, whatever you have in mind doing will not stop the water from precipitating and flowing down through the waste. And to me, this would be a critical issue right now is to stop any water from going down into the aquifer or onto the pad and infiltrating underneath the pad.

So I disagree with the sand, gravel, and clay on top. I personally believe that there should be a fresh layer of sand, clean sand, no rocks, a layer of 100, 125 mil welded plastics on top of that. Excuse me. Let me back up. On top of the sand, put your clay liner, six inches of clay, because clay can only be effective when it's wet, and the liner will ensure that if the liner leaks in the precip, the clay will become saturated and be effective as a second barrier in order to protect the drums and the cardboard boxes and the wooden boxes and the plastic sacks and the barrels.

So I would say that right now we need to concentrate on stopping the water from percolating down through into the waste pile. By covering it with just clay and covering it with sand and gravel is not going to work

because you're going to have to have moisture on the clay in order to keep it effective at all times, and that is a physical impossibility in the desert when we have the hot dry winds blowing. And what it'll do is just crack just like all clay does. Clay is only good under a body of water. So I suggest a 100 mil liner, a 125 mil liner, welded so that even if the welds do have a tendency to want to separate, at least we have some protection that we can stop the moisture from penetrating.

I personally believe that prior to -- this should be a must as of now, but I believe we should wait until Pit 9 has been proven successful and then retrieve the waste and do it like we're doing Pit 9 because I think we're putting the cart in front of the horse. We should know that Pit 9 is going to be successful or not the way they're going to retrieve it.

It is to me critical that we prevent any air pollution out there through mistakes in handling at this present time, and it's just -- I don't want to see any workers impacted by becoming in contact with that waste there because I know there's a lot of waste from Rocky Flats out there.

And it just to me doesn't make any sense to just leave it alone. We have to stop the moisture, and I think that's the way to go. Stop the moisture now, let it

set, finish Pit 9. Let's see the success of Pit 9. And if Pit 9 is successful, let's go over there and do the same thing. One at a time. We're going to get all spread out over there because you know that waste is there to stay.

One other critical thing I think we should take into consideration is about removing waste from the INEL to a different state. I don't think it's fair to other states. I don't think it's fair to create another waste pile somewhere else where some other generation a thousand years down the line is going to have the same problem we're having.

I know you're putting your hopes on Yucca Mountain and the WIPP site. The WIPP site may open. I doubt it. But I do know for a fact that Yucca Mountain will never open. So I think the DOE is actually breathing in the wind there somewhere or on something because the geological makeup of the area just does not warrant it.

And like I expressed to you, my concern on that site was basically the DOE in the past has always picked an area where there's an abundance of water because the old theory was dilute it, let everybody have a little bit of it. But we can't have that anymore. We tried that at Hanford, Savannah, we've tried it here on the Snake River Plain. And if we do get a site at Yucca Mountain, what they're going to do is pollute one of the greatest and

largest aquifers in the desert, the only one.

So, gentlemen, let's take one step at a time. Let's do one thing right and then move on to the next show. But I think we're just spending money foolishly out here. Let's contain it. Let's stop the water right now from sifting down through there. That's your biggest problem, that's what you so stated, is the aquifer.

If we move it, what are we gaining? Nothing. We're going to play checkers with it again. We're stuck with it.

But in the long term when DOE and the INEL is finished with that site out there, I'd like to see it fenced off and closed forever to prevent any construction 10,000 years down the line or 20,000 years down the line where some developer can put people on top of that area. Let's just mark it off the spot. Let's forget it. It's had it. That area is bad. It's fully contaminated all the way down to the Snake River Plain Aquifer. And there should be a buffer zone around that to ensure nobody gets close to it like Love Canal.

Anyway, thank you, gentlemen and ladies.

MS. MARJ BRISSENDEN: Tell us a little bit more about what you perceive as a buffer zone, how we might buffer it off.

MR. USHMAN: Five miles around the outer

perimeter of the INEL.

MRS. ROBERTA USHMAN: Don't forget the canisters.

MR. USHMAN: And, you know, we talked before about the Swedish canisters, about the million year storage capacity that they have for high-level wastes, but nobody ever seems to pursue that. It's a copper-cladded canister with bentonite. It has a longevity of one million years for storing radionuclides, high-level wastes, high heat generating wastes.

It might pay for some of that high-level waste out there if you just contacted the nuclear industry in Sweden and build a massive canister out there of the same materials and consider putting some of that high-level waste in there for long-term storage. Even if the canisters only lasted half that time, it would give you plenty of time to complete your research where we don't have to put a crash course on all this stuff to try and solve a problem that no technology is available for any of this. We're all just now trying to find out how to do it.

Your own scientist says that there are no solutions right now. We're going through a learning period, and I think it's great that the INEL is out there and willing to do this, and I think the INEL has a potential to be in Idaho for a long time doing a lot of

things, but we need to start putting money on the back end of that program to start researching on what we're going to do with this waste, how we can recycle it, reuse it.

To me, a radionuclide that's got any life in it at all is full of energy, and it would appear that these energies can be utilized in some way other than just burying them and throwing them away. That's a good research project.

Thank you.

MR. HULA: Do we have other -- would you like to come up?

MS. BRISSENDEN: Marj Brissenden. And the follow-up of that is how much of this immense Department of Energy budget is presently going to exactly what you propose of the research to utilize the energy positively instead of creating more waste which nobody knows really how to negate its dangers? And we all better be knowing that and better be getting in the front pages of the papers. What percentage are we going on the positives?

MR. HULA: Do we have anyone else that would like to stand up and provide verbal comments? Whatever you're comfortable with.

MR. DON SMITH: Don Smith. I have a question or rather a comment that I'd like to make, and I don't -- I'm going to say it at risk of offending Cassandra, but I

already put the question to her and she already gave me the green light to say this, so I'm going to go ahead and say it.

I have a concern that the criteria that lies behind the scientific study and that the methodology that is used has implicit with it values that we're not taking a look at that are not being presented. The criteria, the values, and the implicit judgments that are being made -- or prior judgments -- top priority judgments that are being made here are not open for review. Instead what we get is something from bureaucrats -- no offense, gentlemen -- bureaucrats and scientists instead. The decision-makers aren't here. And I would like to see public hearings that would involve the decision-makers, those who were involved in drawing up the criteria, who are drawing up or making value judgments that then lead to a certain methodology that then results in a particular offering of one alternative versus another.

And without that, what I find myself wondering or seeing here, perceiving in public hearings such as this, is that what we have is a glossy, somewhat narrowly -- narrow definition of what the problem is. It comes off looking to me more like a public relations presentation than an actual review of what we can do with the big problem.

And I think if we were able to look at these larger, inherent problems, we might be able to attain solutions that seem more reasonable that are in fact more efficient and more long-term, solutions that this gentleman has suggested and others here I think have suggested as well. Thank you.

MR. HULA: Thanks. Do we have anyone else who would like to provide verbal comments tonight?

MRS. USHMAN: I won't have to stand up because I'm pretty loud. Roberta Ushman, U-s-h-m-a-n.

The reason I reminded Mike to bring up the canister was because he has mentioned it several times. And when we had people sitting at tables up there, everybody was so surprised and, oh, what a good idea. But if they followed through with it, we've never heard another word. I'd like to find someone who will contact somebody -- you guys have the wherewithal -- and let us know what you think of it and what they said to you. Thank you.

MR. HULA: Catch me after the meeting or talk to Kathy.

Anyone else?

MS. BRISSENDEN: Marj Brissenden again. And I would like a more illuminating explanation of the canisters for high-level wastes such as those used in Sweden to give us time to solve the waste and negating it

type problem. If Mr. Ushman knows more about and could explain it more fully, I'd be pleased. Thank you.

MR. HULA: If we can -- I'd ask for any other comments on Pad A. Are there any other verbal comments specific to what we discussed tonight?

MS. HEMPHILL: Just to clarify, at this point we are accepting formal public comments on the information that was presented. We encourage you to discuss some of the questions or comments that have been raised tonight with the other people. If we have information that we can provide to you in the future, please make sure that you leave your name and a way to reach you, and we have people available to pursue some of the questions that you have.

MS. BRISSENDEN: Are they present?

MS. HEMPHILL: They may be. We'll have to find out what your questions are, and we'll do whatever we can to assist you.

MS. BRISSENDEN: What I just said. My question, if somebody knows more, please produce.

MR. HULA: I want to thank you all for coming tonight.

(The meeting concluded at 8:35 p.m.)

REPORTER'S CERTIFICATE

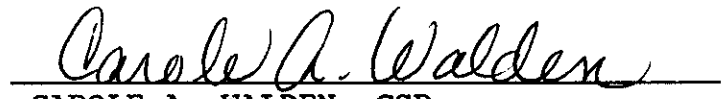
STATE OF IDAHO)
) ss.
County of Canyon)

I, CAROLE A. WALDEN, a Notary Public in and for the State of Idaho, do hereby certify:

That said meeting was taken down by me in shorthand at the time and place therein named and thereafter transcribed by means of computer-aided transcription, and that the foregoing transcript contains a full, true and verbatim record of the said meeting;

I further certify that I have no interest in the event of the action.

WITNESS my hand and seal this 23rd day of August, 1993.



CAROLE A. WALDEN, CSR
Notary Public in and for the State of Idaho, residing in Caldwell, Idaho.
My commission expires 10-21-93.

PAD A PUBLIC MEETING

University Inn
1516 Pullman Road
Moscow, Idaho

August 19, 1993
7:00 p.m.

AGENCY REPRESENTATIVES

U.S. Department of Energy, Idaho Operations Office
Greg Hula
Alan J. Dudziak

EG&G Idaho
Vaughn Halford
Bob Nitschke
Reuel Smith

Environmental Protection Agency, Region 10
Mary Jane Nearman

Idaho Department of Health and Welfare
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I N D E X

GREG HULA: My name is Greg Hula. I'm the Project Manager for the Department of Energy on the Pad A Project. I'd like to welcome you for coming out tonight and taking the time to come down and to listen to what we have to say.

The purpose of tonight's meeting is threefold. I'll be giving you a presentation on Pad A, overview of the Proposed Plan and type of wastes that were disposed there; results of the risk assessment, and an overview of the alternatives we looked at for the Pad; that will be followed by an informal question and answer session. If you all have any questions regarding what was presented tonight or anything in the Proposed Plan, feel free to ask us and we'll give you some answers. Then we'll have a formal verbal comment period, allow you to come up and provide formal comments on the Proposed Plan and the alternatives. We also have some forms in the back of the room, in the back of the Proposed Plan as well as just the form itself. You can provide written comments. The forms are self addressed to the DOE, they're prepaid. All you need to do is write your comment down, drop it in the mail and we'll get it. Also, on the back of the agenda, there is an evaluation form. If you want to take a

couple minutes, jot down your thoughts, give us any ideas on how we could maybe make these meetings better in the future, we'd appreciate any feedback you could give us; basically rate us on how we did.

I'd like to mention the fact that we have a court reporter here tonight to ensure that we get an accurate transcript of the entire meeting including the presentation, Q and A session, and the formal verbal comments. A copy of the transcript will be made available in the Information Repositories throughout the state.

I would also like to mention following tonight's Pad A presentation, Alan Dudziak from the Department of Energy will be giving a quick overview of activities being conducted at the Central Facilities Area Landfill.

With that, I'd like to introduce Dean Nygard with the State of Idaho Department of Environmental Quality; and Mary Jane Nearman with EPA -- Environmental Protection Agency out of Seattle.

With that, the Idaho National Engineering Laboratory is an 890 square mile facility located in this portion of Idaho {indicating}. Several facilities on the site over the lab, the one of which is of importance to us tonight being the Radioactive

Waste Management Complex located in the southwest corner of the INEL.

The Radioactive Waste Management Complex was established in 1952 for the disposal of low-level radioactive waste from INEL operations. In 1954, we began accepting wastes from other DOE facilities such as Rocky Flats Plant in Colorado.

The Radioactive Waste Management Complex consists of two main areas. One being the Transuranic Storage Area which was opened in 1970, and it's for the above ground storage of transuranic wastes, primarily wastes from the Rocky Flats Plant. The other area we have at the Radioactive Waste Management Complex is the 88 acre Subsurface Disposal Area or the burial ground. This is where the waste was buried beginning in 1952, radioactive and hazardous wastes. Consists of several pits and trenches that were dug down the basalt, and then the waste was put in the pits and trenches and covered over with soil. In the north central portion of the SDA, we have Pad A which is the subject of tonight's meeting.

With that, I'd like to turn it over to Vaughn Halford with EG&G Idaho, who's a contractor for the Department of Energy, to give you some technical

details on Pad A.

VAUGHN HALFORD: Good evening. Pad A was constructed in 1972 for the disposal of containerized radioactive wastes. Fifty-five gallon drums and 4 by 4 by 7 boxes were stacked on a three to four inch asphalt pad which overlays a three-inch gravel base. Now, the containers were stacked, typically, a maximum of 11 high for the drums and 5 high for the boxes. Closure was completed for Pad A by placing polyethylene liners or plywood over the containers and then 3 to 6 feet of soil were covered over the waste containers and then seeded with a crested wheatgrass in an attempt to minimize erosion. You can see that the boxes, this light brown area, and the drums are arranged in this configuration taking up about this much of the actual asphalt pad and, again, located in the north central region of the Subsurface Disposal Area. This gives you a pretty good idea of the waste configuration just prior to closure in 1978.

The waste on Pad A consists mostly of nitrate salts produced at the Rocky Flats Plant from their evaporator ponds there. The salts are in nitrate -- potassium or sodium nitrate form and comprise 71 percent of the wastes on Pad A. Other wastes of

Pad A include uranium oxides, uranium and beryllium foundry, and machining wastes from their foundry operations, and dry sewage sludges. And those wastes make up 22 percent of the waste on Pad A, followed by some miscellaneous INEL generated waste that makes up the remainder of the wastes at Pad A. We have a really good idea or clear picture of the types of wastes, types of contaminants and their concentrations, based on disposal records and shipping records from not only the Rocky Flats Plant but other generators that have supplied waste to Pad A as well. Additionally, we have spoken to operators and personnel from those facilities who were at the facilities during the time of their operation. So, we have a really good idea of the process knowledge that occurred from those facilities.

Two investigations were conducted in the past on Pad A; one in 1979, the other in 1989. The one in '79 was performed to determine the condition of some of the oldest containers on the Pad. They stacked waste containers here first in '72, so the 1979 investigation simply involved removing some of the soils away from the edge of this side of the Pad to investigate or check out the appearance or condition

of the drums and boxes. The drums appeared to be in good condition, the boxes were showing various stages of deterioration. In 1989, they put an enclosure on the top of here which is evidence some of the other photos that you've seen, the white enclosure. They went in and retrieved or were attempting to retrieve several drums, and they retrieved a single drum which was transferred to the Transuranic Storage Area which we later sampled in 1992. The waste containers that they observed here, the top layer of drums where the treated wood was laying on top of the drums where the wood was in contact appeared to accelerate corrosion. There were actually holes in the drums. The layers down below showed some signs of rust but no penetration of the containers that was visible. The boxes, however, were showing various advanced stages of deterioration; however, the liners that they could observe were still intact. The drum that we removed was sampled in 1992. When we opened the drum, we found that not only were the double poly liners inside intact, but the waste was very dry. It was a solid form, as is all of the wastes on Pad A. The nitrate salts that were inside were sampled or samples taken, sent to a laboratory, analyzed. Those lab results for the contaminants and types of

contaminants and concentrations nearly identically matched the results that the Rocky Flats Plant had exhibited from grab samples taken in the '70's.

Past monitoring has been conducted at Pad A. It includes taking soil samples from around the Pad. Any time any surface water is available, they'll collect that surface water and analyze it. We do constant air monitoring all around the Radioactive Management Complex -- Waste Management Complex, and we also sample groundwater in and around the RWMC at various times. To date, we have seen no indication of any contaminants attributable to Pad A leaving the site.

With that, I'll turn it back over to Greg and let him discuss more of the investigation.

GREG HULA: Okay. Once we identified what type of wastes we had on Pad A and the type of contaminants that were present in that waste, we had to evaluate the potential risks that could be posed by the contaminants both now and in the future. The way we do this is by conducting a Baseline Risk Assessment which assumes that no action is taken at the site. We evaluate the potential risks assuming no action taken at the site.

Through the Baseline Risk Assessment, we

identify the contaminants that pose the risk as well as how people could be exposed to those contaminants. By exposed, I mean, for example drinking contaminated groundwater or breathing contaminated air. For Pad A, we assumed that burrowing animals could dig into the waste and bring contaminants to the surface, and we also assumed that root system of plants could take -- could uptake the contaminants, and once the plant dies, those contaminants would be on the surface. Once on the surface, we assumed that people could eat contaminated soil, receive direct radiation exposure from the radionuclides brought to the surface as well as breath contaminated air. For the groundwater, we assume that a certain amount of water would move through the waste, dissolve the waste and the contaminants, much like table salt dissolves in a glass of water. Then that water would move down to the aquifer. And once in the aquifer or the groundwater, we assumed that people would drink contaminated groundwater in the future. We also assumed that a future family would use the contaminated groundwater to irrigate food crops and then eat those food crops, thereby becoming exposed to the waste.

In order to estimate how much of the contaminants could end up in the groundwater and how much could end up on the surface, we use computer models. Basically it's a mathematical code that allows us to -- or simulates how contaminants move through the environment. Because there are uncertainties with some of the things up on the site, the Pad itself, the waste containers, and also how contaminants move through the ground below Pad A, we used conservative assumptions in our modeling to ensure that we weren't underestimating potential risks that Pad A might pose in the future. For example, as Vaughn mentioned, the drums and the boxes contain plastic liners in which the waste was placed. And we have no indication that the plastic liners are deteriorated at this in point in time. However, we don't know how long the plastic liners are going to last. They might last 10 years, 25 years, 100 years, we don't know. Because we don't know that, what we assumed was that the quantity of contaminants in the boxes about 56 percent or a little more than half, were not containerized in the boxes or were not containerized in the plastic bags; i.e., those contaminants could move right now.

In order for this waste, because it's solid

in nature, in order for the waste to get to the groundwater, you have to have water moving through the Pad. We don't know how much water infiltrates this waste in any given year. By infiltration, I mean you're going to get some rain. Once it rains, some of the water is going to run off the surface, some is going to evaporate, some will be taken up from the root system of vegetation. Whatever's left over is the amount of water that could infiltrate or come in contact with the waste. We assumed that about two inches of water per year comes in contact with this waste. Based on studies conducted about two year ago just outside of the RWMC, infiltration rates in undisturbed areas are about a quarter of an inch per year, quarter of an inch of water per year. So we were conservative by a factor of about 4 or 5.

Using the results of the modeling, once we had the concentrations or potential concentrations of contaminants in the groundwater and the surface, we assessed the risk to people. We did that for a period of a thousand years into the future. We assumed for the first 100 years that DOE would continue to maintain control of the RWMC, basically prevent access, maintain the fences, and things like that. But after 100 years because of uncertainties

with future land use of the INEL, we assumed DOE no longer controlled the INEL in that families could live anywhere on the INEL. So we've placed future family at the edge of the Pad A boundary, at the edge of the Radioactive Waste Management Complex boundary as well as the INEL boundary.

Given these assumptions and the results of our modeling, our risk assessment indicates that there's no current risk to workers, to public, or the environment from the wastes on Pad A. The only potential future risks based on our modeling assumes -- or is based on some family living at the edge of the Pad A boundary, drinking groundwater that has peaked concentrations of nitrates, which occurs about 250 years in the future. There was no unacceptable risk at the Radioactive Waste Management Complex boundary from the nitrates in the groundwater or beyond, because the concentrations, by the time the nitrates move from the Pad A boundary to the RWMC boundary are low enough to not pose a risk. I want to also indicate that there was no risk from the radionuclides in the groundwater or on the surface based upon the modeling.

Using this information, we basically went back and do a reality check, once again, on what we

know about the assessment as well as what we know about the site. And based on the conservative assumptions, the modeling tends to overestimate the potential concentrations of the contaminants; in this case, for example, the nitrates that end up directly beneath Pad A. Given that information, we believe the existing cover, the existing soil cover is protective barrier to both the groundwater and the surface pathways both now and in the future. Also, based on several years, about 15 years worth of monitoring and sampling data, we have no indication that contaminants are migrating from the Pad at this point in time.

Given this information, we focused our feasibility study on alternatives that ensure a cover system is maintained over the Pad A wastes. The first action alternative we evaluated, containment of the Pad A materials, basically involved placing an entirely new cap system over the existing soil cover system. That cap system would consist of a layer of rock, clay, soil, and sand, would be revegetated, and then maintained over time. One of the options that was also evaluated under this alternative would include synthetic or geomembrane liner in addition to the other earthen materials, the rocks and the clay.

With Alternative 1, we would continue to monitor groundwater, air, soils and surface water to get an early indication, the earliest indication, of any potential waste moving from Pad A.

The second alternative we evaluated which is identified as our Limited Action Alternative and also as the alternative we've identified as our Preferred Alternative, basically maintains the existing soil cover. Based on our Risk Assessment and the conservatism in the assessment, we believe the existing cover is a protective barrier both now and in the future if it's maintained. So, this alternative would focus on recontouring the existing soil cover and maintaining that cover system to minimize surface erosion from surface water and wind, as well as correcting subsidence events. As with Alternative 1, because wastes would be left on site, we would continue monitoring groundwater, soils, surface water and the air around Pad A and beneath Pad A and on top to provide early indications of releases of contaminants.

The monitoring data under this alternative would be independently evaluated by the state and EPA as the information becomes available to ensure that there's an independent check to make sure the cover

continues to be effective in the future. With that alternative, DOE would also continue to maintain institutional controls for however long we need to in the future. With the last part of this alternative would include a reevaluation of the record of decision on Pad A in two years based on the new monitoring data, and then at least every five years thereafter.

Now we've given you an overview on Pad A, we've talked about the wastes and contaminants, the results of the Risk Assessment as well as the alternatives we evaluated for Pad A. What's next? We'll be accepting public comments, obviously tonight, verbal comments, as well as any written comments you might have and we will be accepting written comments through August 26, about another week. Once the comment period closes, we'll take those comments, develop responses. Those responses will become part of the Record of Decision which we anticipate signing in early 1994.

With that, I'd like to open it up to the floor for any questions.

CHUCK BROSCIOUS: If similar material that is in Pad A now were shipped to INEL, where would it go?

GREG HULA: In the pits. In the active low-level waste pits.

CHUCK BROSCIOUS: It wouldn't go in the Transuranic Storage Area?

GREG HULA: There's only -- if I remember right --

CHUCK BROSCIOUS: It contains transuranics.

GREG HULA: It contains transuranic radionuclides, but there's only two drums out of the 18,000-plus on the Pad that are transuranic waste by definition. Any waste that's transuranic waste by definition, if came into Idaho, which I believe the Governor still has a ban on that, would end up in the Transuranic Storage Area. The low-level waste, low-level radioactive waste would go in the active low-level rad disposal pits. So transuranic waste would be stored over here; and the other, basically all the other wastes, low-level waste would go in here. You can have low-level waste that contains transuranic radionuclides. You can contain plutonium and americium and still be low-level waste. It's just once that quantity of plutonium and americium hits a certain activity, it becomes transuranic waste.

CHUCK BROSCIOUS: That's what now, 100?

GREG HULA: That's 100 nanocuries per gram. Low-level waste can have plutonium in it. It can have plutonium in it, but it's not until it reaches a certain activity, that it, by definition, becomes transuranic waste, whereas called transuranic waste is handled differently.

CHUCK BROSCIOUS: That used to be 10 nanocuries and they upped it to 100.

GREG HULA: That's correct.

TOM DECHERT: How do you propose to account for in your models for leaching, the fact that there's going to be other wastes in the RWMC that are going to be contributing to pollution of the subsurface waters? And you know, how do you intend to accumulate those risks not only from the RWMC but from the Central Facilities and Test Reactor areas and all those sorts of things?

GREG HULA: There's going to be a Remedial Investigation and Feasibility Study, a risk assessment, that looks at all of the pits and trenches, all of the waste in the SDA. That formally begins in about a year and a half. We've already started preparing information to do that assessment today. I mean, we've already started gathering information today to begin that risk assessment on

the entire Subsurface Disposal Area in about a year and a half. Once we've assessed the risk from all of the waste area groups, the RWMC, Test Area North, Central Facilities Area, there will be a site-wide where an INEL Comprehensive Risk Assessment conducted that will look at the risk from a cumulative, big picture perspective. It basically will add up all the risks that each --

TOM DECHERT: My question is, how are you going to do that? I understand that's what you plan to do. My question is, how do you intend to do that to make that realistic?

GREG HULA: I'd like real quick to introduce Bob Nitschke, EG&G Risk Assessor supporting Department of Energy.

BOB NITSCHKE: Well, this past year, we developed a protocol to help us to decide exactly how best to do that. In a general sense, what will happen is we'll be calculating, for instance, groundwater pathway, plumes of contamination from each of the source; and where those plumes overlap, then we will add them together and calculate risk associated. Where the plumes don't overlap, we won't be -- it's a cumulative risk still, but it won't necessarily be additive. And we'll do the same thing

from surface pathways to the extent that the range of those kinds of contaminants could spread that far away. But for a lot of purposes the TAN surface pathway is isolated from the Radioactive Waste Management Complex because they're 50 miles away.

TOM DECHERT: Do you feel like you have enough information about the plumes given the heterogeneity of the materials that you're looking at?

BOB NITSCHKE: That's part of the effort over the next few years to gather the data necessary to make those determinations. Not today, but that's where we're headed.

GREG HULA: Does that answer your question?

TOM DECHERT: Well, not really.

GREG HULA: The bottom line is, we don't know exactly how we're going to do that yet. We're developing methodology, looking at it right now so we can start that in about three or four years, trying to gather as much information as we can.

TOM DECHERT: I have some concerns that those methods, for instance, for the Test Reactor Area. Those methods, those models really haven't been made public and apparently aren't made public; and how are we going to assess that that's -- that you're looking

at that correctly?

BOB NITSCHKE: All the models that we have used and plan to use are in the public domain. I'm not sure what's in the Administrative Record but --

TOM DECHERT: I thought Dames & Moore had a model for -- proprietary; and the last time I asked, I was told that it wasn't available.

GREG HULA: Dean, do you want to answer.

DEAN NYGARD: I'm Dean Nygard and I'm the State's Project Manager. I believe the model you're referring to is probably on the Perched Water Model. That is available. That was presented in the Perched Water Remedial Study Report which was available last --

TOM DECHERT: Well, I beg to differ with you. Because I asked for it and I was told that it wasn't available. I was told it was proprietary information for Dames & Moore. I contacted EPA in Seattle and asked them the very same question and I was told, that at that time, that I couldn't see the model, that it was proprietary.

GREG HULA: I think we were using Model 6 --

TOM DECHERT: Well if you're not, that's fine. All I'm saying is I think at that time that was an issue. I haven't seen the model you're using

here. I think that it is a major issue that -- because of the heterogeneity, the source of materials we're dealing with out there. I think that there should be some record of availability of these things so people can take a look at them and see how they're used and see the information is in there correctly. Because it's a major concern, the fact that you guys are going at this piecemeal and going to try and add this all together in the end. And efforts -- other places have not been particularly successful in doing that sort of approach.

DEAN NYGARD: To the best of my knowledge, those models are available, and maybe we can talk after the meeting and see if we can access those for you, review those.

BOB NITSCHKE: I just might add, we're doing a model selection right now for the Comprehensive WAG 7, and one of the criteria we do have for and those that are publicly available so other people can re-create those calculations and feel good about themselves.

TOM DECHERT: How did you select your alternatives, or how did you define your alternatives from what you were going to consider for Pad A? I can easily conceive other alternatives that are

beyond the ones that you presented here as the one you selected. I'm curious to know how you arrived at those three alternatives to be the only ones you're going to consider.

GREG HULA: What we did, based on the results of the risk assessment, the risk assessment indicates the existing cover is protective of humans and the environment both now and in the future. Given the fact that there are uncertainties with the long-term integrity of that cover, i.e., how much it would erode over time if not maintained, we focused alternatives or we focused the study on alternatives that ensured a cover was maintained on the Pad to account for those uncertainties. The alternatives you see here tonight, basically meet the criteria of protection of human health and the environment and compliance with federal regulations. So we focused on -- using that information, we focused on containment alternatives or capping alternatives.

TOM DECHERT: And yet you would -- I just heard you say that -- and from what I can see from the designs here, that this material is set above the current ground level, exposed to both water and wind erosion; and we're talking about materials that we're interested in keeping somewhat under caps for several

hundred if not several thousand years. Do you have any idea of the erosion rate of this material? Is this the material that's placed on top of there? Is this the material from directly out of Spreading Area B and without a particular soil cover on? I mean, it seems to me like that if you're talking about maintaining the cover, that for a couple thousand years without really knowing erosion rate, there's some problems there.

GREG HULA: We don't know the erosion rate and that's why I mention there's uncertainties with the long-term integrity. The soil covers -- you asked a couple questions in there, and I want to make sure I answer them. The soil cover, the material that's put on the cover right now, does indeed come out of the spreading areas. As far as maintaining it for a thousand, two thousand years, what we're looking at right now is this would be -- cover system we'll put on and we would reevaluate this decision every five years -- well, in two years; then every five year thereafter to ensure that it continues to remain protective of the public. However long that takes us out to --

TOM DECHERT: My intuity -- if I was engineering this sort of a situation, it seems to me

like -- that there certainly should have been a more conservative alternative considered that would have more or less ensured -- because we know that's going to erode, sticking up like that and that sort of environment. There are all sorts of evidence down there. Every time you go down there to a rain storm, you know the stuff's moving off there. You've got the trenches dug around the outside that are filling up with sediment. There is an erosion rate there and it's a fairly rapid erosion rate. And it seems like that at least one alternative should have been considered where that erosion rate would have been ameliorated. And I don't seem to -- where that erosion rate would not -- would have been taken care of through time because we know it's going to happen.

GREG HULA: Appreciate that comment. We're here to get that tonight. But these alternatives do that for us. We're not talking --

TOM DECHERT: No, they don't. Those alternatives do not -- all of those alternatives as they sit right now, you have a cover that's exposed to erosion and it's going to erode.

GREG HULA: That's correct. That's why we maintain that.

TOM DECHERT: So it's not a long-term solution even if it turned out that your other evaluations of what's going on with the water movement down through the soil into the groundwater, this isn't going to contribute overall to a groundwater pollution. The surface action that's going to take place, the material's going to be exposed in a number of years given these alternatives. There's not an alternative here which puts the material at a level below the surface where it's not going to be eroded to the surface.

GREG HULA: I disagree with you. I guess because these are walking away from that path. These are maintaining --

TOM DECHERT: But you say, hundred years -- your assumption was DOE was going to maintain their control for a hundred years. What happens for the next 18,000 years?

GREG HULA: If DOE leaves the site, we're into a whole new -- we need to relook at what we do with Pad A.

TOM DECHERT: But why engineer now for something -- why not engineer as long as you're going to the money of engineering it and doing something with it? Why not engineer it in the framework of

understanding -- you know, I know that you use the assessment for your assessments of using the past to predict the future. Why not look at what's going on in the past and predict what's going to go on in the future and engineer it so it will be stable into the future for the time frame that you're looking at? This alternative here, obviously is not stable over thousands of years.

BOB NITSCHKE: I might add in the modeling that was used, we did take into account wind and surface erosion rate for the period of evaluation and did use erosion rate for some fields south of I-15 down there that the Department of Agriculture had published that we think are more conservative than the somewhat depositional area that we have out there. So the modeling that was done did take into account wind and surface erosion and did then indicate we're still protective of the concentration.

TOM DECHERT: But you have this site built up above the depositional level of the bottom of that basin. I don't know what the top of that is, but that if I'm seeing that correctly, you have that above the surface of the ground, and the bottom of that basin is, I agree, is depositional. That cover that's covering that Pad is above the level of what

deposition and you're looking at those -- a lot of those bare basalts sitting around there are bare because materials that have been deposited on there are eroded right back off of them into those concave positions. But that Pad there is not -- the way you have it built up, is not a concave sort of a situation.

BOB NITSCHKE: I understand. But we did take into account erosion rates to account for that.

GREG HULA: All I can tell is, these alternatives have one assumption, a rather important assumption, the DOE continues to maintain that site for --

TOM DECHERT: For 100 years is what you said.

GREG HULA: We assumed that -- how do I want to say this -- for risk assessment purposes, that's the assumption we made. The alternatives will have DOE maintaining institutional controls for as long as it takes to keep people out of that stuff.

PAT SCOTT: If that assumption changes, again as he was saying, if that assumption changes, then as we are continuously reevaluating the protectiveness of the remedy if they were to walk away, the level of protectiveness would change and you would need to reevaluate what you can do with Pad A.

TOM DECHERT: That's exactly my point. Because I think you are going to -- why -- I can see lots of things knowing what I know about the RWMC that says that this is not a stable situation. And there's lots of reasons to assume that -- or not to assume, but there's lots I can -- there's lots of scenarios where DOE is going to lose their funding or those sorts of things where they're going to walk away from this and it's going to be left sitting there. I'm asking why not have an alternative that at least offers the public a chance to say, hey we like this one better. It's an alternative where you're going to be placing the material where if DOE does lose its funding, that there's a chance that that thing might remain stable and not endanger the public. The way it's currently situated right there, I would not agree that that's the case.

And I think it's a fallacious assumption to assume given what we know is going on with federal funding in this day and age and the way Superfund sites are being treated, that if DOE loses its funding, they're not just going to walk away and leave it. I don't think that's a reasonable assumption at all. When you're putting millions of dollars in it already to try to do something to

stabilize it.

GREG HULA: As we've said, the assumptions, the alternatives -- are based on the assumption that DOE is at the site, controls access to the site, if that changes, we need to go back in and reevaluate what we do with that.

TOM DECHERT: I think you should make a different assumption to begin with.

GREG HULA: If there are other alternatives that you would like to see evaluated, we're here tonight to accept that. We've got the comment forms. We'll have the verbal comment period in a few minutes. All I can say is --

CHUCK BROSCIOUS: This pathway here promptable to walk away and then thrust our responsibility on the future generations which may not even call themselves Americans or may not even be something called United States of America in 20 years. Who knows. But to -- for the present generations that created this mess, and the present bureaucracies that created this mess, to walk away from it and thrust that responsibility on future generations and whoever ends up living in that area, is just absolutely irresponsible.

GREG HULA: I disagree with that. Sounds

like we're getting into a lot of comments. Are there any other questions on what's been presented tonight or questions?

TOM DECHERT: I have one more question. In terms for Pad A, when that cover was put on there, was there any effort made to imitate the existing soil that exists in the areas so that -- or is it just simply material from the spreading area that was dumped in there without any particular horizons recreated or anything like that? Does it have a chance of being seen as a soil that's going to turn permanent, support permanent vegetation, or is it merely the stuff out of Spreading Area B?

GREG HULA: It's the stuff out of Spreading Area B and it does support vegetation. I don't know if we have a picture that shows the crested wheatgrass that grows on it. But it does support vegetation. Am I answering your question?

TOM DECHERT: You answered my question.

CHUCK BROSCIOUS: In as much as subsurface disposal has always been part of what was done at the site since it opened at day 1, and at some point in history, there was a realization that it wasn't a good idea to continue doing that with transuranic wastes.

GREG HULA: Correct.

CHUCK BROSCIOUS: And the decision was to not put it in subsurface pits and trenches, but put it in things like Pad A where it was above where it could be treated.

GREG HULA: Transuranic Storage Area.

CHUCK BROSCIOUS: Right. But in that early part of history, you know, they were using approaches like Pad A; is that correct?

GREG HULA: Using -- are you asking were they using approaches like Pad A before they made the decision to begin storing transuranic waste on asphalt beds? I'm not sure I understand your question.

CHUCK BROSCIOUS: At some point, there was a decision made that subsurface disposal of transuranic waste or any other categories above low-level waste was a bad idea.

GREG HULA: It was 1970.

CHUCK BROSCIOUS: Right. In that vicinity. After that, transuranics, when they arrived at the site were put into situations like Pad A.

GREG HULA: No.

CHUCK BROSCIOUS: Why would they put stuff in Pad A when they could have put it in the ground along

with all the other low-level waste?

GREG HULA: Real good question. Let me find -- the reason Pad A was put down is because in this area of the SDA, the Subsurface Disposal Area, there wasn't enough soils to dig a trench. Basically it was a basalt high. In order to not just put anything out in this one acre area, they opted to put an asphalt pad down and dispose of the wastes on the asphalt pad because there's this high basalt area.

CHUCK BROSCIOUS: You've got to be kidding. There has never been a shortage of land down there.

GREG HULA: In this area, you've only got --

CHUCK BROSCIOUS: You've got almost 900 square miles. Even at that time, there's never -- I mean, you're still -- your subsurface disposal. There wasn't a shortage of land at that time. You can't be serious at that explanation.

GREG HULA: I'm dead serious. The reason they put Pad A in the SDA is because in that area, they had this high basalt.

CHUCK BROSCIOUS: I'm not talking about downtown New York City with that kind of land shortages.

GREG HULA: I think I answered your question. If I didn't --

CHUCK BROSCIOUS: I think there was a reason why that stuff was put up on a pad and not put in the Subsurface Disposal Areas as is even currently is.

GREG HULA: That's because they couldn't dig a pit and trench here because the basalt was up there, because the basalt flowed high at that area. Other questions? I'm not trying to hide anything from you, I'm telling you the facts. That's why they put Pad A in the SDA. Are there questions?

TOM DECHERT: Are there other pits in the Radioactive Waste Management Complex that were blasted for basalt.

GREG HULA: I believe these active pits are the only ones that were blasted.

VAUGHN HALFORD: That was just a level before, there were small chunks. It wasn't like Pad A where that entire area of the north central portion of the SDA had less than two feet of soil. We have subsurface maps that show the basalt flows in this region over several years, that they were taken; and Pad A, there is a high spot there where they couldn't dig down. It would take an extensive amount of blasting, so they opted to go with the Pad and place those wastes on top of the Pad.

LOUISE REGELIN: As a follow-up to Chuck's

question, why did they put it in that place? I mean, I understand --

GREG HULA: You mean the Pad?

LOUISE REGELIN: No, no. Geographically, why did they locate the disposal area there? Why didn't they move it someplace else?

PAT SCOTT: Where there was more soil.

GREG HULA: I wish I knew all the history of the decisions that were made back in 1949. But my understanding is, the evaluations that were done indicated this whole area over here had sufficient surficial sediments. There was like 20 to 30 feet of dirt where the basalt was pretty much down below grade where they could bury the waste. But within the area that -- why they picked this specific 88 acres and not out here, I don't know. But in this specific 88 acres, there happened to be a couple of areas where the basalt flows were higher than the other areas where they had 20 to 30 feet of dirt where they could dig down into and bury the waste. I really don't know.

LOUISE REGELIN: Then that's the answer to the question, I don't know. Because it seems silly to me that with this entire area -- and I have a bit of geomorphology in my background too, and I know the

areas are not continuous, it doesn't come in like this. And I would agree with Chuck. I would really like to know the reason. When they could have moved a quarter of mile that way or a quarter of a mile that way or 10 miles, and have not had this problem. But that's neither here nor there.

TOM DECHERT: I would hazard to guess that it's because it's in a topographic location and largely out of sight.

LOUISE REGELIN: I understand that. I'm just saying I want to know what reasons in their record.

GREG HULA: Other questions? I wish I had the answer to your question. We can get it, yeah. But there were extensive studies done back in '49 before the site was selected. Other questions? If there are no other questions, I'd like to recommend we take a 15-minute break, come back about 8:15, and we'll accept the formal verbal comments. Thank you.

{A short break was taken.}

GREG HULA: I ask that you come up in front so the court reporter can see you and hear real well. When you come up, please state your name and spell your name so we have an accurate record. And I'd also like to ask that we limit comments to about 5 minutes if possible to ensure that everybody who

wants to provide a comment has time to do so.

With that, Chuck, I believe you signed up for comment if you're ready to make that, or anyone else, feel free to come on up.

CHUCK BROSCIOUS: This process basically --

GREG HULA: Could you state your name, please.

CHUCK BROSCIOUS: Chuck Broscious, B-R-O-S-C-I-O-U-S, Executive Director of the Environmental Defense Institute; Troy, Idaho. This process -- we're here, you know, discussing remediation of Pad A. This is only obviously one of a long series of different CERCLA cleanup processes at the burial ground. What's absolutely ridiculous, it's worse than ridiculous, it's outrageous. We're talking about plans to remediate Pad A in an immediate vicinity in the burial grounds, there's waste going in holes in the ground that's even worse as we speak, that will be the object of future cleanup, Superfund cleanup. I mean, it is absolutely ludicrous, this whole process that talking about cleaning up, and right around behind, they're burying more stuff that's going to have to be cleaned up.

This points to the need for having site-specific advisory boards to have a substantive

vehicle for public participation in this process. Department of Energy -- Secretary O'Leary has already given a mandate to Idaho to initiate this. The models have already been established by EPA Advisory Committee. That model has been published and out and generally recognized. Why don't we have that moving ahead in Idaho? You know, it's needed, it's got to be done. Again, if there was this substantive public participation vehicle, some priorities would probably not be what they are today. Instead of fussing around with Pad A, we'd being looking at the real problems in the pits and trenches, you know, where the real bad stuff is. That's not to say that this isn't bad stuff. But this isn't the worst place.

You know, when you set priorities, you go to the worst situation and you start trying to come up with plans with how you deal with that. You don't go to the most easy situation, you know, to start out with. Whatever's done here, needs to comply with the Nuclear Waste Policy Act and the NRC Regulatory -- Nuclear Regulatory Commission disposal criteria for the stuff that's in Pad A. Walking away from it, is like I said before, irresponsible. It's putting on future generations, the financial burden and possible environmental problems that should be dealt with

right here by the generations that created it and the bureaucracy that did it.

The map on the back and the description defies what you said about why they put Pad A where it is and why it's on the surface and not -- and why it didn't go in subsurface, literally because it's retrievable. They wanted it to be retrievable because they knew that they couldn't get away with putting it in the ground anymore. And at some point, they are going to have to build a repository, like WIPP or Yucca Mountain, and that's where that stuff was supposed to go; at that time, a crude monitored retrievable storage pad. That was the whole idea. Your characterization of it, of the material in there probably is really grossly inaccurate. And once -- if you were to really go in there and check every one of those barrels, you'd probably find out why it was left on the surface in monitored retrievable storage situations.

The cost estimates in the mailing, I think are absolutely fricking outrageous. You could build a subtitle D landfill with that kind of money. The whole thing, liners, monitoring wells, the whole dad-gum thing for what you're coming up with cost estimates. If that's what we end up being charged

for, American taxpayers really have been taken to the ringer.

GREG HULA: Thanks. Do we have anybody else who would like to come up and provide formal comment? If not, I'd say we'll take about two minutes. We'll let Alan Dudziak get set up for his presentation on CFA Landfills, and I thank you for coming out for the Pad A meetings.

CERTIFICATE

STATE OF IDAHO)
) ss
COUNTY OF NEZ PERCE)

I, DARCIE OLSON, A Certified Shorthand Reporter and Notary Public in and for the State of Idaho residing at Lewiston, Idaho, do hereby certify:

THAT the annexed and foregoing public hearing was taken before me and reduced to typewriting under my direction, said hearing being taken at Moscow, Idaho on August 19, 1993, and being completed on said day;

I FURTHER CERTIFY that I am not a relative or employee of any of the parties to said action and that I am not financially interested in the said action or the outcome thereof;

I FURTHER CERTIFY that the said hearing, upon oral testimony as above transcribed, is a full, true, and correct transcript of the testimony of said speakers made and taken at the time of the foregoing hearing;

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal this 23rd day of September, 1993.

DARCIE OLSON, CSR
Notary Public in and for the
State of Idaho, residing at
Lewiston, Idaho