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COMMUNITY MEETING AUGUST 8, 1995, PLANTATION

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TRANSCRIPT

U.S. DEPARTMENT OF ENERGY

COMMUNITY MEETING

August 8, 1995

THE PLANTATION

HARRISON, OHIO

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1 MR. STEGNER: Let's go ahead and get
2 started now, shall we?
3 Well, good evening and welcome
4 everyone, thank you all for coming. This is the
5 biggest turnout we've had for one of these in
6 several months.
7 My name is Gary Stegner, Department
8 of Public Affairs for the Department of Energy at
9 Fernald. Before I get started, I want to introduce
10 some folks, at least acknowledge the presence of
11 some Congressional staffers. We have a
12 representative tonight here from Senator DeWine's
13 staff, Congressman Portman's office, and
14 Congressman Chabot's office. Did I leave anybody
15 out? Okay, great. And I noticed coming in tonight
16 we had trustees here from Crosby Township and
17 Morgan Township and Ross Township. So, folks,
18 welcome.
19 You see in front of you tonight what
20 will pass for, at least temporarily, our agenda.
21 It's not really going to happen like this tonight.
22 After my welcoming, we will have Johnny Reising
23 come up, and he will give a cleanup status. During
24 Johnny's remarks, he will touch on Operable Unit 4,

1 which is the K-65 silos. We would ask that any
2 questions on uranium extraction be held until Dr.
3 Fisher's presentation, and what is going to happen,
4 following Johnny, Jack will offer some remarks and
5 John Applegate, Chairman of the Citizens Task
6 Force, will also have some remarks.
7 Rather than going into break-out
8 sessions like we have advertised here and we had
9 advertised before, in talking with a lot of people,
10 they would like very much to discuss the uranium
11 extraction issue. What we're going to do is
12 diverge from this and give that 40-minute block, or
13 a little more if necessary, to Dr. Darrell Fisher,
14 who is here. He is being interviewed right now.
15 But that 40-minute block will be Dr. Fisher.
16 Following his presentation, which I
17 understand will be about 10 or 15 minutes, he'll
18 take questions and he'll be here for I guess as
19 long as necessary. If we see this is going to be
20 something more than we can fit in here in one
21 evening, we will work with Dr. Fisher and some of
22 the other folks involved in this project and put on
23 a separate workshop for you all. We're certainly
24 willing to do that, and in talking to the folks

1 associated with Dr. Fisher and the uranium
2 extraction project, they're willing to do that
3 also. So we'll try to fit in as much as we can
4 tonight on that.
5 Following Dr. Fisher, we'll take a
6 break, and if you want to leave after that, that's
7 fine if that's what you're here to see and hear,
8 and then we will get into the presentations by our
9 regulators, our local citizens action group, and
10 the citizens task force. And that also will be an
11 open mike time also. If anybody here has any
12 comments they want to offer at that time, the
13 microphone will be available for your comments
14 too.
15 So rather than -- I hope I'm not
16 forgetting anything. No, I don't think so. We'll
17 go straight into Johnny Reising's presentation.
18 Johnny.
19 MR. REISING: Thank you, Gary. In
20 looking at the calendar, it appears that the last
21 community meeting we had was back on March 14th of
22 '95. Normally these meetings run in about
23 four-month cycles, but this one encompasses
24 approximately a five-month duration since our last

1 meeting. Internally the presentation that I'm
2 giving is normally referred to as the RI/FS status
3 update, or as you can see on the agenda, it's the
4 cleanup update.
5 As I talked last time I gave the
6 community meeting presentation, we're in a period
7 of transition going from the RI/FS activities
8 actually into the remedial design and remedial
9 action portions of the CERCLA process. So we are
10 truly into the cleanup stage of the CERCLA
11 process.
12 As you'll see, I'm going to go
13 through the operable units, give you a very brief
14 overview of the positive things and the progress
15 that we have made in the last five months at the
16 site. We'll be talking about the Records of
17 Decision that we have had issued for Operable Unit
18 4, Operable Units 1, 2, and the Interim Record of
19 Decision that we have for OU-3. In addition, we
20 have recently submitted a draft Record of Decision
21 on Operable Unit 5. So hopefully we can make these
22 positive points in progress that we've made in the
23 last five months.
24 I would like to begin by talking

about Operable Unit 1. Operable Unit 1 is the waste pits, approximately a 36-acre area out in the northwest corner of the site. The Record of Decision for OU-1 was signed in March of '95, and pursuant to the amended Consent Agreement, we're required to submit a remedial design work plan within 60 days of the finalization of that document. Due to the activities we've had in OU-1, as the first bullet indicates, we had the remedial design work plan, which was actually approved by the EPA on June 21st, '95. So that's a major accomplishment as far as the remedial site activity is concerned.

The Record of Decision, the preferred alternative for OU-1 in the waste pits is excavating and drying the waste pit material and that should be off-site for disposal. As a result, we developed what we refer to as the DEEP Program. As you can see, it's the Dewatering Excavation Evaluation Program. Initiated those activities in October of 1994. We completed the wet excavations and we've completed the geotechnical sampling of Pits 5 and 6. The purpose of the DEEP Program was basically to obtain geotechnical data as to the

1 ability to implement the Record of Decision as far
2 as excavation of this material.
3 There's additional phase of the DEEP
4 Program which is being undertaken. The additional
5 phase deals with the dewatering phase, and in this
6 process we're actually installing wells into the
7 waste pit area and evaluating our ability to
8 dewater the material prior to excavating it and
9 then drying it. Thus saving hopefully time and
10 money and expenses as far as the treatment of that
11 material, the drying of it.
12 Other activities, as you can see,
13 there's a joint meeting between OU-1 and OU-4. We
14 held a public workshop on various transportation
15 issues, well attended, a lot of good information
16 was provided. Primarily for OU-1 we're looking at
17 train transport out West as far as the dry pit
18 material, and OU-4, we're looking primarily at
19 truck transportation of the vitrified K-65
20 material. This meeting took place, as you can see,
21 in June of '95.
22 Other activities in addition,
23 Operable Unit 1 is preparing to award design
24 contracts to upgrade three of the CSX trestles,

which are found on the spur line, which runs basically from the site all the way out to Cottage Grove, Indiana, and hopefully we'll be awarded that in September.

This is just a quick shot of one of the first phases or so of the DEEP Program. This is a pit excavation that we did out there trying to evaluate the consistency of the pits, taking a look at the type of material there was and obtain various geotechnical information. Some excellent results as far as the ability of the information we received. Able to characterize the actual physical content and the various types of material we found in these pits.

Operable Unit 2. Operable Unit 2 is referred to as the other waste areas. It consists of the South Field, the inactive flyash area, the formerly active flyash area, the lime sludge ponds, and solid waste landfill. Basically has five subunits in it. The OU-2 Record of Decision was signed by the EPA on June 8th, 1995. Again, another signed Record of Decision.

We submitted on July 31st a predesign investigation and site selection report on the

on-site disposal facility. Primarily this investigation was to determine the best hydrogeology of the area for the location of the on-site disposal facility.

Also the draft Operable Unit 2 remedial design work plan was submitted within 60 days after finalization of the Record of Decision on August 7th, and the agencies are going forth to review that document.

In addition, we have some activity in the area of removal action, removal action number 30, referred to as the seepage control at the South Field and the inactive flyash area. Hopefully we will be completing that activity in early September. The intent and the function of this is to collect seepage that exists in both the South Field and the inactive flyash area, to collect this water and pump it to the water treatment facility, where it would be treated. In addition, we also excavated a small area down in the southeast corner of the South Field, which drains a lot of sediment from these seep areas. They excavated an area which was approximately 180 feet by 80 feet, anywhere between, oh, I think it was between 6 and

18 inches, took that material and placed it in storage with the OU-5 soil plots.

This slide is just a portion of the report that went to the EPA. It basically shows the selected location or the proposed location at this point in time of the on-site disposal facility. As you can see, this does not show the entire site. It shows basically the northeast portion of the production area with the proposed location. This encompasses all of the area of the proposed on-site disposal facility. That includes berms and other associated structures that would be with it, and not only the deposition area. Again, this location was as a result of our preliminary design and our hydrogeological investigations. This placement is based on the best geological and hydrological location for on-site disposal.

This is removal action 30, where we're showing the intercepting of the seeps. This shows basically there's a sump further down the line, and this is one of the lines to where the support dam is pumped up from the South Field and the inactive flyash area up towards the water treatment facility where it is treated and then

1 discharged.

2 Operable Unit 3. Operable Unit 3,
3 often referred to as the former production area,
4 encompasses approximately 136 acres. It also
5 encompasses, except for the silos, all the man-made
6 structures throughout the site. A lot of activity
7 in Operable Unit 3 in the last five months.

8 First one up there is the
9 hydrofluoric acid tank car and the removal action
10 to where we neutralized approximately 6,000 gallons
11 of hydrofluoric acid. This was contained primarily
12 in two tank cars. The main tank car contained
13 approximately 5400 gallons of material, and there
14 was a small transfer vessel that was in association
15 with that which had approximately 600 gallons of
16 material in that. Completed neutralization and
17 field work by the end of July, I think July 21 or
18 so. Very successful project. Very pleased with
19 the smoothness and the implementation of that
20 activity. Very good job.

21 The next bullet talks about the
22 remedial design of the prioritization sequencing
23 report, referred to as the PSR. This is a document
24 which is kind of a rider document to the remedial

1 design for the OU-3 Interim Record of Decision. It
2 basically is the document that outlines the
3 sequencing of the 22 or 26 or so complexes that we
4 have. It shows the sequence of the proposed
5 takedown and D&D of all of the facilities at the
6 site. As you can see, it was approved by both
7 EPA's, I think US back in May and the Ohio back in
8 July.
9 The next project, the next bullet
10 talks about the UNH neutralization project, and I
11 am very pleased to say that that project is in
12 progress, and in talking to people it is considered
13 to be ahead of schedule. It is proceeding
14 smoothly. The project basically started as far as
15 in place neutralization of the UNH on March 24th of
16 '95. That was followed up by the neutralization
17 and filtration of material which initiated in June
18 15th of this year. As of this date we've
19 neutralized approximately 129,000 gallons of the
20 205,000 gallons total that we have. So we're
21 approximately 60 percent done with the
22 neutralization of that material. In checking with
23 the project manager, we had a total of
24 approximately 19 tanks of UNH out there. Presently

1 we have UNH remaining in only 4, so we've come a
2 long way with that project, and I compliment all
3 the people involved with that.
4 Next bullet, OU-3, complete and safe
5 shutdown of Plant 4 in March, followed shortly
6 there by the D&D activities in Plant 4. The D&D
7 activities consist primarily of the removal of
8 internal asbestos material and also some of the
9 equipment removal, and we're moving forward with
10 that.
11 A couple of slides to show you some
12 of the real work we're doing. This is the HF tank
13 car, the two cars. The car that is closest to us
14 had the majority of hydrofluoric acid in it, as I
15 said, approximately 5400 gallons or so, some
16 residual that was left in the secondary tank car.
17 The transfer vessel that had about 600 gallons or
18 so is located just on the other side of this.
19 Again, this was conducted at the tank car area of
20 the site and was very successful.
21 Part of the UNH activities, this is
22 one of the smaller, one of the two smaller EIMCO
23 filters that we have at the site. This is located
24 in Plant 8. Primarily the process is adding maybe

1 some hydroxide to the UNH, creating a slurry, a
2 slurry that is pumped over to Plant 8, to where it
3 is run to the EIMCO's and the material is filtered
4 out. Precipitate then is scraped off by the EIMCO
5 filters in that process and then drummed, is sealed
6 up and prepared for shipment to NTS.
7 Next slide shows just that, it shows
8 the drumming station. The drumming station is
9 basically the roped-off area in the background
10 there, and these are drums that have been prepared
11 to receive the filtrate, as it may be, from the
12 UNH. Then those are sealed and prepared for
13 shipment off to NTS.
14 This is just a chart showing progress
15 and the original schedule, which is in the darker
16 material there. That was an internal schedule that
17 we had. We had a requirement due to a director's
18 findings and orders from the Ohio EPA in order to
19 finish neutralization and filtration of this
20 material by September 25th. In order to complete
21 that successfully, this is the target schedule that
22 we gave ourselves. As you can see by the pluses
23 and the line, this is the schedule we're currently
24 following as far as the actual filtration and

1 neutralization, and it appears that we are ahead of
2 schedule and will complete the activity, we're
3 scheduled probably for the very end of August or
4 the first of September. So it looks like we're
5 going to be able to bring this in approximately one
6 month ahead of schedule.
7 Plant 4, which is the large building
8 that you see in the very middle of the picture.
9 We'll talk about Plant 7. Plant 7 previously had
10 stood just to the south, which is to your left of
11 this, of that building. As I said, we have
12 completed the safe shutdown and have initiated D&D
13 of this structure.
14 Just another shot of Plant 4 to give
15 you an idea. It's a very large building, and I
16 think quite an accomplishment in order to be D&D in
17 taking that facility down. A logical transition as
18 far as from Plant 7 on to Plant 4, opening up a
19 very large area primarily in the very center of the
20 production area to be used for laydown areas,
21 potential staging areas, et cetera. So we're
22 looking forward to moving forward with this.
23 Continuing with Operable Unit 3, some
24 of the other activities, hopefully we'll complete

1 safe shutdown in Plant 1 August of 1995, and we
2 hope to initiate D&D activities in Plant 1 either
3 in October or November. Again, that is pending
4 availability of funding in fiscal year '96. I
5 throw that caveat on there. We have awarded the
6 contract. We do have a stop order on that activity
7 presently until we determine our funding
8 availability for the first part of fiscal year '96,
9 but in talking to FERMCO, it appears that we will
10 be able to relieve that stop order and initiate D&D
11 in October or November.
12 The last bullet there talks about
13 submittal of final reports in June to the EPA's.
14 All of these reports came very close to one another
15 as far as being sent to the agencies, and I thought
16 it was important to try to capture that. We've got
17 Plant 7, fire training facility, and Plant 1 ore
18 silos. The final report constitutes the
19 culmination of those activities. The removal
20 action process is fairly long, can be fairly long,
21 and I think it speaks well to the site and the
22 cooperation of the various agencies that we're now
23 issuing these final reports. These are three
24 fairly significant activities. It's been a good

1 process.
2 Again, this just shows these three
3 removal actions, one which was Plant 7, which is
4 the tall building in the very middle of the slide.
5 As I said, it was taken down and we're going next
6 on to Plant 4.
7 And this simply is a computergraphics
8 enhanced depiction of the Plant 7 as it has been
9 removed. If you remember the photo I showed you
10 just a few moments ago, it is in fact very similar
11 to that.
12 This is the fire training facility.
13 The fire training facility is located basically due
14 north of the production area, just outside the
15 inner fence, and was used, as the name depicts, as
16 the fire training facility for basically the fire
17 department putting out fires and drills and those
18 types of things. A simulated two-story structure,
19 burn pit, also tanks for burning material. All of
20 these structures have been D&D'd, and though we
21 have had soils picked up in various areas and
22 collected in there, so we closed this one out.
23 Plant 1 ore silos, another removal
24 action that was completed. As you can see, we had

1 concrete and tile silos which were located in the
2 Plant 1 area. The picture furthest to the left
3 indicates them in a pre-D&D activity. The picture
4 in the middle shows the tile silos being surrounded
5 by a fragment material in order to maintain a
6 negative pressure on this activity, so to reduce
7 the potential for air emissions of any
8 radionuclides. And then the third picture to the
9 far side shows you the same, as I refer to them,
10 sausage tanks with the tile silos having been
11 removed. Again, a successful removal action.
12 Operable Unit 4. Jack indicated, or,
13 excuse me, as Gary indicated, Operable Unit 4 does
14 contain the four silos, Silos 1 and 2 which contain
15 the K-65 material; Silo 3, which contains the cold
16 metal oxides; and Silo 4, which is empty. The
17 Record of Decision for Operable Unit 4 was signed
18 on December 7th. As indicated, as a result of
19 that, we submitted a remedial design work plan back
20 in February, 60 days after the finalization of that
21 Record of Decision. As indicated by the first
22 bullet, we had a remedial design and a
23 vitrification plant workshop on June 13th to where
24 we talked about the design, we talked about the RD

work plan, and we talked about the design of the vitrification plant and the entire process as we're going to go through with the submittals of our preliminary designs, our prefinal designs, on into the RA work plans to be submitted.

The remedial design work plan was approved by the EPA on June 15th. Some anticipated activities, construction of the vitrification pilot plant is scheduled to be completed in September. This unit is basically a one ton per day melter to hopefully, excuse me, the start-up of Phase 2 of this activity, the pilot plant, and phase -- excuse me, Phase 1. Phase 1 is the nonradioactive surrogate material. All this should be put through the melter.

The Phase 2, which is the radioactive material from Silos 2 and 3 that will be ran through the pilot plant, that activity is scheduled to be initiated in April of '96 and run for approximately three months through June of '96.

In addition, we're anticipating during that time the design and building of the full-scale unit. The full-scale unit will primarily be composed of three 8-ton per day units

1 for a total production potential of 24 tons per
2 day. We're looking at that facility going on line
3 approximately in December of '98 and being
4 completed in December of the year 2001.
5 This is a nice shot, panoramic view
6 showing the location of the K-65 silos. The two
7 with the white tops to the side are the K-65's
8 numbered 1, 2, 3, and 4. As you can see, there's a
9 berm around them to enhance integrity and also to
10 prevent initiation of radon. As you can see also,
11 we have Silo 3, cold metal oxides, located at the
12 way. And Silo 4, the silo that does not have any
13 material in it, you see a superstructure
14 surrounding that. Recently conducted an activity
15 of constructing that superstructure and using it
16 for a mock entry and simulation as to how we would
17 actually go into and enter the K-65 silos in order
18 to extract the material. The superstructure is
19 being used due to the compromised or threatened
20 integrity of the silos as a result of their design
21 life basically.
22 In the foreground, as you can see
23 with the buildings and various piping, is the
24 location of the pilot plant and the location of the

1 full-scale melter in the future. The melter would
2 be inside the enclosed facility, and it hadn't been
3 constructed at this point in time that there was a
4 slurry line that -- that's the reason it hasn't
5 been constructed, leading basically from the pilot
6 plant area back towards the silos.
7 Operable Unit 5. Operable Unit 5 is
8 the environmental media. Constitutes primarily all
9 the soils, the subsurface, and the groundwater.
10 We've had a fair amount of activity in Operable
11 Unit 5. The issues in the final proposed plan to
12 EPA on May 1st, and as the process goes, we had a
13 public comment period on the proposed plan. It was
14 from May 1 through June 30th. There was a request
15 for an extension of that, and that's why the time
16 frame went beyond the normal 30 days. We had our
17 required public meeting and solicited and received
18 formal comments on that proposed plan on May 23rd,
19 '95. As I stated at the initiation of my remarks,
20 we issued a draft Record of Decision for Operable
21 Unit 5 on August 2nd and anticipate any comments
22 and/or approval from the agencies within 60 days of
23 that submittal.
24 The next slide I have is a very busy

1 slide, and the main function of this slide is to
2 basically give you an indication of where we are.
3 If you look at the timing, here's 8 of '95 to give
4 you an idea of where we're at. This is by operable
5 unit by year and by various activities, by the
6 legends you can tell. The key here and the thing
7 to focus in on is the number of Records of
8 Decisions or Interim Records of Decisions that we
9 are past, we are beyond. Also the RDWP's, the
10 submittal of remedial design and work plans
11 constituting another major effort, another step
12 forward as far as the process is concerned. And
13 then one of the key issues also being the RA's, the
14 actual remedial action, the actual work to be
15 conducted. So again it's a busy slide, but
16 basically an indication as to where we're at in the
17 process.
18 Again a busy slide, basically
19 informational only, meant to be illustrative. I
20 talked about the removal actions at the site. We
21 have approximately 30 removal actions that we have
22 entered into. This gives you a status update as to
23 those that are ongoing and those that are
24 completed. Right now we've completed approximately

1 19 of the 30. Many of those that are ongoing are
2 annual updates or annual activities that we will
3 continue and we will continue through into
4 remediation. Again illustrative primarily to show
5 you that in addition to all of the paperwork, the
6 RI, the FS, and the Records of Decision that we're
7 working on, we're actually doing a lot of work in
8 the field too as far as remediation is concerned.
9 I had the opportunity to fly up to
10 Chicago and back within a five-day period or so
11 recently, and I thought to myself, we need to share
12 with the public the various numbers of meetings
13 that we have with the various regulators. So the
14 next two pages in your handout are simply
15 illustrative and a quick rundown of the various
16 meetings that we've had with the various regulators
17 that we have to deal with since our last meeting.
18 I think there's probably a total of 30 or so odd
19 meetings. Again, just illustrative of the fact
20 that we are in constant contact with the
21 regulators, meeting with them, working with them,
22 presenting information, ideas, concepts before
23 them, so that they don't receive a submittal or a
24 piece of paper and wonder what the rhyme or reason

1 is for the document. So as you can see, a lot of
2 activity has taken place.
3 The last slide I have is our
4 quarterly update as it may be for the number of
5 DE's, drum equivalents, that are shipped off-site.
6 We've modified this chart a little bit so it's a
7 little more user friendly than it's been in the
8 past. As you can see by the asterisk at the
9 bottom, it also includes shipments to other
10 locations than NTS, and the various years below
11 that break out some of the other locations to where
12 we're sending material in addition to NTS. It is
13 broken out by fiscal year as far as the drum
14 equivalents that have been shipped off-site.
15 As you can see, through the end of
16 July, basically we're at 18,000 plus. This year
17 we're hoping to get between 90 and 95,000 DE's
18 shipped off-site. That's basically our goal.
19 Again, I would just like to leave you
20 with the comment that, as you can see, in the last
21 five months we've had a lot of progress, a lot of
22 positive things that have happened. We're working
23 well in the area of remediation and doing real
24 cleanup. Thank you.

1 MR. STEGNER: Thank you, Johnny.
2 Next we're going to have Jack Craig, who is our DOE
3 Area Office Manager Director at Fernald. He will
4 be followed by a brief presentation by John
5 Applegate, Fernald Citizens Task Force Chair.
6 Again, following that, we'll diverge from our
7 program and Dr. Fisher will offer some remarks and
8 then he'll take questions. Jack.
9 MR. CRAIG: Thank you, Gary. Johnny
10 put up the slide that talked about all the meetings
11 we've had with Ohio and US EPA. I think equally
12 we've had a number of meetings over the last five
13 months with members of the public, and we're happy
14 to be here tonight, hopefully provide you with a
15 lot of good information and hopefully answer your
16 questions that you may have.
17 I know many of you are interested in
18 hearing about Operable Unit 4 and possible interest
19 in radium. I'll talk a little bit about that in a
20 minute. Before I do that, I would like to at least
21 mention another handout you may have on your
22 table. It was one of our break-out subjects for
23 tonight. Hopefully we can talk about this in the
24 near future. We have embarked on what we call an

1 accelerated cleanup at the site. The first page
2 talks about an Ohio field office vision where all
3 the offices that are part of the DOE Ohio field
4 office system are now trying to see if cleanup can
5 be completed in ten years. And Fernald is included
6 in that.
7 Back in December of last year when
8 many DOE sites, including ourselves, got the word
9 that there may be significant budget cuts, we
10 looked at, based on those budget cuts, how long it
11 would take to do this cleanup and complete the
12 entire project. That projected out to about a
13 25-year project to get this thing completely done.
14 In May of this year we had a meeting,
15 a budget meeting with Tom Grumbly in Washington,
16 our Assistant Secretary who provides the money to
17 Fernald and many other EM sites. We actually
18 presented a proposal wherein if some more money was
19 given to Fernald up front, we could actually
20 accelerate the work, complete the project sooner,
21 and actually save money. This package kind of
22 talks, lays all that out in front of you, and
23 essentially it provides funding estimates required
24 to allow us to complete the project in ten years.

1 We think that is significant. We think that
2 reduces risk faster, addresses public concerns, and
3 also saves money in the long run. Hopefully we
4 will have some time in the fall meetings to discuss
5 that because we think it is very important.
6 A few things about Operable Unit 4.
7 Johnny put some slides up that talked about some of
8 the decisions, some of the actions that have taken
9 place over the last year. I wanted to give a
10 little background on Operable Unit 4 for those of
11 you not familiar with those terms.
12 K-65 silos, some waste material
13 on-site that does have a lot of radium content
14 inside them. The environmental studies have been
15 going on in this area for about ten years on-site.
16 Started in the mid 1980's. We've had extensive
17 environmental sampling, environmental documents
18 prepared, laying out exactly what material was
19 included in Operable Unit 4, evaluating a number of
20 alternatives from a large, very large list, paring
21 them down to a few smaller alternatives, and all
22 along that way there have been interactions with
23 the public trying to inform the public on where we
24 were at.

1 We actually over the last year got
2 down to selecting a preferred alternative, and that
3 preferred alternative was proposed by the
4 Department of Energy. That alternative was
5 approved by Ohio and US EPA, was sent out to the
6 public in the form of a proposed plan. The public
7 had an opportunity to comment on that proposed plan
8 and the document was actually signed through the
9 Record of Decision, like Johnny said, in December
10 of this year. And we have aggressively been
11 attempting to implement that Record of Decision.
12 Johnny showed a picture that actually showed the
13 construction of some facilities to vitrify that
14 material.
15 In light of some of the interest we
16 have gotten recently, as many of you may know,
17 there are a group of research scientists who feel
18 that the radium that's contained in this material
19 may be beneficial for cancer research. And we have
20 done some things in light of that to investigate
21 some of the impacts to the cleanup if in fact the
22 decision was made to extract the radium. I'll talk
23 a little bit about those later tonight. I don't
24 want to get ahead of Dr. Fisher, but one of the

1 things we've looked at is if in fact a decision was
2 made by someone that radium extraction is
3 necessary, we've looked at the cost, the added cost
4 of doing that, we've looked at the schedule impacts
5 by doing that. We've looked at the fact and we
6 feel the fact that we are vitrifying this material,
7 it's not necessarily a bad thing, and we think
8 there may be a win/win in this in the fact we can
9 vitrify the material and still get the radium out
10 at some future time if there is an interest, and
11 we'll discuss a little bit about that later.
12 We've also looked at other sources in
13 the world that we can find that may be other
14 potential sources of radium, and we'll have some
15 information on that if people are interested.
16 One of the things I want to make
17 clear is that the Department of Energy has received
18 no proposal from anyone for us to provide radium
19 for any research. There have been a lot of
20 discussions informally. The Department of Energy
21 has gotten no proposal, no direction to do anything
22 different than the path we're going down. We're
23 willing to talk to any interested party, we're here
24 tonight to do that. This is the first time I met

1 Dr. Fisher. We're willing to sit down and talk to
2 him and others about that. But we're willing to do
3 that. We think there's a win/win, like I said. We
4 think we can still follow along with the cleanup as
5 planned and still provide the information, the
6 material they may need if in fact it becomes a real
7 need.
8 I will be able to talk about that a
9 little after Dr. Fisher's presentation, but I think
10 next John Applegate is going to talk about the
11 Citizens Task Force.
12 MR. APPLEGATE: Thanks, Jack. I'll
13 keep this brief because I am quite certain that
14 everyone is really here to, like me, to hear about
15 the radium. What I really just want to say is that
16 the Fernald Citizens Task Force, which was
17 chartered in August, 1993, two years ago, to look
18 at the basic remediation questions, last week
19 submitted its report, its complete report to the
20 Department of Energy, US Environmental Protection
21 Agency, and the Ohio Environmental Protection
22 Agency.
23 Our final report, not really that
24 final because we expect to continue to meet, but

1 this first major report really covers the four
2 topics that we were asked to make recommendations
3 on and compiles recommendations that have been made
4 over the course of the last several months really
5 starting in November of last year. They dealt with
6 four issues: The future use of the site,
7 remediation or cleanup levels, waste disposition,
8 that is where waste should be disposed of, and
9 cleanup priorities, which really turned into a
10 discussion of the accelerated cleanup that Jack
11 Craig mentioned. And one of the more pleasant
12 parts of our work has been that working with the
13 Department of Energy and regulators, I think that
14 as a group Fernald has managed to persuade
15 Washington that an accelerated cleanup is feasible
16 and is worth some extra investment in Fernald when
17 the overall budget for this part of the Department
18 of Energy has been going down, and I think that's
19 something that we can all be very pleased about
20 both in terms of actually getting the cleanup done
21 and in terms of our pocketbooks because the faster
22 it's done, it's much, much, much cheaper.
23 There are copies of, a couple copies
24 of our report in the back. If you are on more or

less any Fernald mailing list, you will be getting or have already gotten a copy of the report. It's this thing, to pick it out among the piles of stuff you probably already get. But if you're not on the regular mailing list and would like to get a copy of it, there's a sign-up sheet in back near them, and we'd be happy to send you one.

I'm really not going to say much more about it. I think the nature of our recommendations has been publicized before, I think they're all contained in a pretty clear way here. We, of course, invite any comments anytime. Our phone number is in the report and our address. And, as I say, I'm really here to hear about the radium issue as much as anyone, and I think I'll just close with that. Gary.

MR. STEGNER: Thank you, John. I think everybody who has followed the work of the Citizens Task Force and the results of their work probably will agree that their work, their recommendations have led directly to increased funding for the site and the decision by the management, the leadership of the Department of Energy to put Fernald on an accelerated cleanup

1 schedule. So we're definitely beholden to the
2 Fernald Citizens Task Force and work with John
3 Applegate and members of the task force, many of
4 whom are here tonight.
5 Moving right along, again the main
6 part of our program tonight is Dr. Darrell Fisher.
7 He's going to talk about radium, his program, how
8 Fernald may or may not fit into that program. As I
9 said before, one of the things, one of the
10 hallmarks at Fernald the last few years has been
11 doing things in the open, and we pledge that we
12 have done that and we pledge to continue doing
13 that. If time runs out on us tonight, with the
14 amount of interest it very well could, I think, I
15 know we would pay to have Dr. Fisher come back,
16 spend some more time with us and some of his
17 colleagues to discuss this matter even in more
18 depth if we cannot finish tonight.
19 So without further ado, why don't I
20 turn this over to Dr. Fisher, let him make his
21 presentation. And logistically, I'm not sure how
22 we'll do this afterward on the questions and
23 answers, I don't know if you'll need a moderator,
24 if you just want to stand up here and point people

1 out, if you want to be on your own.
2 DR. FISHER: Thank you, Gary. Thank
3 you Mr. Craig for your invitation to be here
4 today. Maybe I'm more surprised by this than you
5 are. When I looked at the program for tonight's
6 meeting, I found that my name was not on it, so I
7 was really quite comfortable about coming here
8 tonight. Then I got a message that I would be
9 facing the wolf pack, and I didn't know quite what
10 that meant.
11 I want to reassure you of who I am
12 and what our purpose is. I thank Mike Gallagher of
13 the Cincinnati Enquirer for calling some of these
14 issues to your attention. I think he's done a very
15 nice job in doing that.
16 Let me go back a few years. First of
17 all, I'm a cancer survivor. I had a bone tumor
18 removed from my right leg at the age of 11. More
19 recently, I've had a father with colon cancer, my
20 best friend died of metastatic brain tumor, and my
21 mentor, Dr. Charles W. Mace, an eminent cancer
22 researcher and radiobiologist, recently died of
23 lymphoma.
24 For the past nine years I've been

1 involved as an affiliate investigator in clinical
2 research with the Fred Hutchinson Cancer Research
3 Center in Seattle, and I am an adjunct faculty
4 member on the medical school staff at the
5 University of Washington Medical Center in
6 Seattle. We've been working on a new method of
7 treating cancer, and for the first time by any
8 group have shown that monoclonal antibodies labeled
9 with radioactive isotopes can be remarkably
10 effective in treating certain forms of cancer.
11 This opens the door for a wider application of
12 their use in the future.
13 In particular, the physicians and
14 scientists at the Fred Hutchinson Cancer Research
15 Center in Seattle, they focus and specialize on
16 lymphoma, B-cell lymphoma, and acute leukemia.
17 These are what we consider the liquid or diffuse
18 tumors rather than the solid tumors. The
19 monoclonal antibodies have been effective in
20 targeting these cancers really quite remarkably.
21 This hasn't been -- This has been a development in
22 the last maybe three or four years when very
23 specific monoclonal antibodies have been
24 developed. What these are, these are natural

1 proteins produced against foreign substances.
2 Their derivation is from other animals. Human
3 tumors are put in the animals and the antibody
4 producing cells are extracted out and then cloned.
5 It was about 1978 when two scientists
6 discovered the way of mass producing antibodies for
7 which they received the Nobel prize, and then more
8 recently chemists have learned how to cage
9 radioactive materials in what are called
10 macrocyclic crown ethers so that they can be
11 attached to the proteins and used in therapy.
12 My specific responsibility, I'm a
13 laboratory research scientist affiliated with
14 Battelle Memorial Institute and the Pacific
15 Northwest Laboratory in Richland, Washington. My
16 specific responsibility is called treatment
17 planning, calculating the radiation doses that are
18 needed to achieve certain objectives by the
19 physicians so we guide therapy. The objective is
20 to give the maximum tolerable amount of this
21 therapy to the patient. And this is done by,
22 through radiation dosimetry and extensive study of
23 each patient.
24 Perhaps I relate to you also in

1 another way. I live less than two miles from a
2 major cleanup site, the Hanford nuclear
3 reservation. I know what it's like to live that
4 close, and I certainly can empathize with your
5 feelings.
6 I also want to express a little bit
7 of frustration in that we have worked very hard
8 over the last few years writing proposals, I spent
9 probably -- I spend a third of my time writing
10 proposals primarily to the Department of Energy,
11 and where we offer suggestions, very specific
12 recommendations for new research in cancer
13 therapy. We address these to the Office of Health
14 and Environmental Research primarily, and we've
15 been frustrated at the cutbacks in Department of
16 Energy funding for nuclear medicine research, which
17 is now very, very low compared to previously. So
18 this is really quite frustrating for us.
19 Another thing I want to make sure
20 that everyone understands is that medical
21 scientists have really no desire or will to impact
22 on the cleanup schedule of this or any other site.
23 That really isn't part of our agenda. We would
24 like to see the work here progress as it has been.

1 If I could address just a few points
2 raised by Mr. Craig, and I appreciate his concern.
3 But, first of all, let me explain how radium is
4 beneficial and how it's valuable. Old radium is a
5 liability for anyone who has custodian of it. This
6 includes thousands of physicians, many hospitals
7 and medical centers, industrial companies with old
8 well resources, even the Department of Energy
9 itself because radium has been used for vast
10 numbers of purposes. The military has old World
11 War I and World War II aircraft dials painted with
12 radium that they don't know quite what to do with.
13 They were used as neutron starters and starters for
14 atomic weapons, and these are complex sources
15 because of the radium beryllium mixtures, and
16 beryllium is a toxic substance. But radium is a
17 liability for anyone who holds it because it's
18 expensive to deal with, it's a hazardous material,
19 and it emits radon, which none of us should
20 breathe, has a high gamma radiation abundance, plus
21 it emits alpha particles. So it has a little bit
22 of every evil that we know of in terms of a
23 radiation hazard.
24 It was used medically about the turn

1 of the century to treat cancer. Has been used on
2 and off in the past about 97 years with some
3 success in certain applications, but in general its
4 uses -- it's not used for medical purposes any
5 longer. There are a few physicians who use radium
6 needles to treat tongue tumors, but not too many
7 who do this.
8 If we take radium and we -- if we
9 clean it up and re-encapsulate it, purify it, put
10 it into special capsules and then put it into a
11 nuclear reactor, we can change it into another
12 element. The elements that we can change it into
13 are actinium and thorium, other heavy elements,
14 heavier than radium. And when these decay, they
15 decay at certain rates, and some of their decayed
16 products, daughters and granddaughters, constitute
17 isotopes that are useful for therapy of cancer.
18 Why? Because they have the right chemical
19 properties, they have the right half life, and
20 these half lives need to be short, on the order of
21 about anywhere from one hour to ten or eleven days,
22 and the longer, these longer live up to ten and
23 eleven days, are ideal for many applications. But
24 they have to be attached to these tumor seeking

1 monoclonal antibodies, and that's a very, very
2 difficult assignment.
3 One of the daughter products of
4 radium or radiation is another radium isotope. You
5 create first a heavy radium, then a heavy actinium,
6 actinium 227, then it decays to a heavy thorium,
7 which then alpha decays down to radium 223, so we
8 come back to an element of radium again.
9 We proposed radium 223 as an
10 anti-tumor agent back in 1987, but our chemists at
11 Hanford said you'll never be able to use it because
12 you can't attach it to monoclonal antibodies. So
13 we spent the last seven or eight years trying to
14 develop the chemistry to do that.
15 I think we've succeeded, and a series
16 of animal studies are planned and in progress. We
17 have a pretty good team of investigators, it
18 involves scientists from the University of
19 Washington, the University of Idaho, and some
20 biotechnical companies. And there are several
21 large pharmaceutical companies now interested in
22 this technology because it does represent a
23 potential major new method for treating cancer.
24 Again, we haven't overcome all of the

1 technical aspects of using it, and it's not
2 available to physicians and the hospitals yet.
3 Hopefully in the next few years it will be.
4 At the same time parallel work has
5 been done on another series of isotopes also made
6 from radium. These include actinium 225 and
7 bismuth 213, which are made when you take radium,
8 put it into a reactor, and add several neutrons to
9 it, not just one but several. It takes at least
10 three or four neutrons. So the yield is much
11 smaller.
12 We've looked at alternative sources
13 for these isotopes, many alternative sources. One
14 of them, incidentally, is rather interesting. It
15 would involve extracting these isotopes from
16 uranium 233, which is weapons-grade material, of
17 which we have a small stockpile still remaining in
18 Oak Ridge, but it is very expensive. The cost of
19 doing this is immense. In fact, we think of these
20 materials as having values on the order of million
21 dollars per gram because they're so difficult to
22 produce.
23 Anyway, getting back to the Fernald
24 situation, the radium here represents the major

1 known reserve or stockpile of this old undesirable
2 form of radium that I know of anywhere in the
3 world. There are other sources, but they're hard
4 to get at and we don't own them, and they would be
5 very difficult to obtain. So over the past maybe
6 two, two and a half years we've looked at the
7 Fernald radium as a potential source for these
8 short-lived medical isotopes. We've had some
9 discussions, and most of these have been very
10 unsuccessful because we never could raise any
11 attention or get anyone to listen to us. We're
12 really just a bunch of crackpot scientists.
13 However, the science that we're working on is well
14 demonstrated, it's very sound, and it follows on
15 this particular premise, and to introduce you to
16 this, I want to explain the difference between
17 alpha particles and beta particles because it's
18 very important.
19 What we're using now in the therapy
20 of cancer with antibodies is several different
21 beta-emitting isotopes, iodine 131, which we get
22 from Canada, yttrium 90, which we get from Hanford
23 waste, and some others, uranium 186, gold 198, and
24 so forth. So these are mostly products of nuclear

1 fission, nuclear reactors, and in most cases these
2 are all radioactive wastes. The beta particles are
3 very light electrons, and it takes a good 2 or
4 3,000 of these to hit a cell to kill it, and the
5 radiation comes out at kind of a slow rate over a
6 period of days. Unfortunately, tumor cells are
7 very creative, and they can repair this low dose
8 radiation as though nothing hit them. So in many
9 ways therapy with the beta emitters has been
10 unsuccessful, especially against the more
11 aggressive forms of cancer.
12 That's why we're left with the alpha
13 emitters as an alternative. Alpha particles don't
14 travel as far, but they're much more damaging.
15 They're like sledge hammers compared to BB's. When
16 they hit the head cells in the nucleus, they
17 destroy them, they do so much damage that the
18 repair mechanism is destroyed and these cells don't
19 survive. There is no repair of this high nuclear
20 energy radiation damage.
21 Dr. Maclis, formerly at Harvard and
22 now at the Cleveland Clinic, Dr. Michael Zoluski at
23 Duke, Dr. Steve Wilbert at the University of
24 Washington, Dr. David Scheinberg, New York Memorial

1 Sloan Kettering Cancer Center, these are all
2 scientists, I could name many others, at the
3 National Cancer Institute who for the past many
4 years have been using alpha emitters in their
5 cancer research very successfully. The biggest
6 problem is that we haven't had a supply of this
7 material for this kind of therapy. So we've been
8 very frustrated, and we've investigated Fernald as
9 a source.
10 If the radium were put into glass, at
11 some expense to the taxpayer I might add, we
12 probably wouldn't be interested in it because we
13 would regard this as the final disposal method for
14 that particular waste material. Vitrification is
15 used at our site, and once it's in glass, that's
16 the permanent storage form for that material. We
17 would probably look for other sources of radium.
18 What are they? High radium drinking
19 water in drinking wells, that's an option we've
20 looked at; Canadian uranium ores, which are very
21 rich, but again, all of these other alternatives
22 are extremely difficult. When you get right down
23 to it, there's a lot of radium in the world, but
24 it's spread finely and it's very expensive to find

1 and produce, purify, make available. We only know
2 of perhaps a few hundred grams available to us
3 right now.
4 Now, if the radium from this site
5 were extracted, it would have to go someplace,
6 wouldn't it? Someone would have to take care of
7 it. So we're proposing now to the Department of
8 Energy that a new project be established to receive
9 the radium, to manage it, to purify it, to
10 re-encapsulate it for later use, and it would be
11 done so in a manner that would protect the
12 environment, the public health and safety, and also
13 workers.
14 A couple of other points I wanted to
15 make. I can't read my writing. This idea that
16 it's all new and caught the attention of everyone,
17 while it seems new to most of you, we've struggled
18 to bring this to the attention of the Department of
19 Energy for many years, and we really, we haven't
20 been listened to. So if you ever feel that your
21 callings in the night have gone unanswered, I can
22 relate to it, I really can. In fact, Cincinnati is
23 aware of this situation, but I'm not sure that
24 Washington is. You do have a strong supporter in

1 Mr. Owen Lowe, who heads up the office, the isotope
2 program office. And this particular project to
3 make these alpha emitters was highlighted in a
4 report to Congress in 1994. But I'm not sure that
5 anyone paid a lot of attention to it.
6 I'd like to thank you for the
7 opportunity of coming. I'm kind of a scared little
8 bunny rabbit up here with all of you. I empathize
9 with you. I'm concerned as a health physicist and
10 medical physicist not only about radiation
11 protection but also the development of more
12 effective cancer therapeutic agents. If I can
13 answer any specific questions or serve as a
14 resource to any of you now or in the future, please
15 allow me that opportunity. Gary.
16 MR. STEGNER: Thank you very much.
17 I think that was very informative. Why don't we
18 just, if you have some extra time, maybe spend the
19 next half hour or so answering some questions if
20 that's okay.
21 DR. FISHER: Sure.
22 MR. STEGNER: Start right here.
23 Lisa.
24 MS. CRAWFORD: I'm going to try to

1 be brief, and I'm going to try to keep my emotions
2 as close to my heart as I can tonight. I don't
3 want you to be a little scared bunny rabbit here
4 because we've been doing this for ten and a half
5 years, Dr. Fisher, so it becomes old hat after a
6 while.
7 I want to tell you a story is what
8 I'm going to do, and I've got some stuff I want to
9 give you. Again, I'm going to try to remain calm,
10 as calm as I can, but you need to understand that
11 this is a real heavy-duty issue here, it's been a
12 heavy-duty issue here for ten and a half years, and
13 it's an emotional issue for all of us.
14 I have six real specific questions
15 that I wrote down on a small piece of paper that
16 I'm going to talk about as I go through my talk.
17 I'm also going to give them to you because what I
18 would like for you to do is, I want your answers to
19 be in writing back to us. I guess I want to start
20 off with four questions, and then I want to kind of
21 talk a little bit about them. And these are
22 questions that not only I've been asking myself
23 these last few weeks, but that other people have
24 been asking us too.

1 Is there a technology out there to
2 extract this, and, if so, what is it and who's
3 developing it or who has developed it? We would
4 like you to be real specific about that.
5 How long will this take, you know,
6 days, months, years, decades?
7 How much is it going to cost and
8 who's going to pay for it? Certainly not our
9 cleanup budget money, because I'll tell you we have
10 busted our butts these last six months, left shoe
11 leather all over Washington, DC, have made hundreds
12 of dollars worth of phones calls to maintain the
13 budget we have to proceed with the cleanup here at
14 Fernald.
15 And one other question is, and this
16 is a question I've heard all day long today, is
17 where have you been?
18 I guess the first thing I want to say
19 tonight is that we're not a lot of coldhearted,
20 unsympathetic folks that live out here with regard
21 to cancer research. You know, we have neighbors
22 and friends and I have a lot of family members that
23 we've watched die with cancer, as you talked about
24 earlier. We've been to many funerals. You talk to

1 the workers at this site, and they'll tell you how
2 many of their comrades they've lost to cancer. So
3 we're not unsympathetic to this at all, and I want
4 to make sure that you and a lot of other people
5 understand that, because we've lived through it, we
6 know what it's like.
7 I also want to tell you, and I don't
8 know if you know this, but we've been around for a
9 long time, ten and a half years is a long time, and
10 a lot of people in this room have dedicated their
11 lives and a lot of time and a lot of energy and
12 some of them at their own expense to really focus
13 and work on this issue.
14 I want to talk a little bit about
15 secrecy. Secrecy is what got us into this mess out
16 here, and I read an article in the paper with
17 regard to some comments you had made and to the
18 article Mike Gallagher had written the other day,
19 and it talked a lot about secret research and the
20 secrecy behind the cancer research, and that really
21 bothered me, because secrecy got us into trouble
22 and it sure as hell ain't going to get us out of
23 trouble. If anything, what you end up doing to the
24 community is you end up causing us more distress

1 and you end up with more distrust in the
2 community.
3 Here at Fernald we have a public
4 participation policy that we have beaten into DOE's
5 head over the years, and they'll tell you that,
6 that we have done that. And we feel like that has
7 been highly violated. We also have a community
8 relations plan that we worked on very hard. But in
9 our opinion it is now shredded and stomped on and
10 they might as well throw it out the window, and we
11 might as well start all over again.
12 You know, it's a moral and an ethical
13 question in our mind. And the only way I can think
14 of to hopefully make you understand this is how we
15 sacrifice, the neighbors and the workers at
16 Fernald, of which I should remind you have already
17 been guinea pigs for the government, have already
18 drank contaminated water, have already breathed
19 radioactive air, and to ask us to sacrifice the
20 health and safety or even the lives in some cases
21 for a potential cure for cancer, you know, I don't
22 see a balance here. This really bothers me. I
23 mean is it okay to sacrifice one side to save
24 another side? I don't think that's -- that's an

1 unjustifiable thing to ask us to do. It kind of
2 reminds me a little bit of that analogy that we all
3 hear, do we rob Peter to pay Paul. How much more
4 should this community and the work force have to
5 give? We have given until we don't have anymore to
6 give.
7 This whole idea of the radium
8 extraction process just came to light in this
9 community six weeks ago, that's it. We read it in
10 the newspaper. That's when we found out about it.
11 That pretty much shoots the hell out of the public
12 participation process here. You know, it's deja vu
13 for us tonight back to 1985.
14 I've talked to a lot of Department of
15 Energy folks in the last few days. I've called
16 experts that I know and trust across this country
17 in the last few days. Nobody knows anything about
18 this. You said in your remarks earlier you've been
19 looking at this issue for two and a half years and
20 you said nobody would pay attention to you. If you
21 had come to this community and talked to us two and
22 a half years ago, we would have paid attention.
23 I guess it bothers us because we feel
24 like you've come in the back door. You met with

1 certain people that work at the site, there were
2 secret meetings held, and we have been given the
3 minutes and the videotapes to those meetings two
4 months after the fact. And I just want to once
5 again remind you that we don't do things that way
6 here. We have worked on this RI/FS process, of
7 which you heard an update of earlier tonight, for
8 ten very long and very hard years, and we have as a
9 community sat at the table, have participated, have
10 attended endless meetings, and we've made some
11 really tough, hard decisions here in the last six
12 months. And we're looking at this as decisions
13 that you are now asking us to throw out the window,
14 and I'll use another one of my old analogies here.
15 Do you throw the baby out with the backfire?
16 You know, two years ago we struggled
17 through this OU-4 ROD process. We had endless
18 meetings, we talked about vitrification. We're not
19 a stupid public here. We educated ourselves, we
20 worked hard on these issues, and we moved away from
21 sitting on a fence post here to the public will
22 help us make these tough, hard decisions and move
23 this process along. You saw from the update that
24 Johnny Reising gave us earlier tonight that we have

1 moved this process along.
2 I guess I have to also -- I want to
3 give you just a little bit of a history on K-65.
4 This stuff has been around, it's here been at
5 Fernald for over 40 years. Nobody asked us if we
6 wanted it, they just brought it here. We were
7 never even told it was here until ten and a half
8 years ago, and they certainly didn't tell us it was
9 worth a tremendous amount of money.
10 You know, we were told in 1985, and I
11 have the two reports that I want to give you
12 tonight because I want to make sure that you get
13 them and you read them, we have a 1985 Camargo
14 report which told us the silos have outlived their
15 lives, they were structurally unsound, they were
16 old, they were decrepit, they were unstable. The
17 list could go on and on. And then in 1993 this
18 report was updated and revised, and what did it
19 come back and tell us, the same exact thing,
20 they're dangerous.
21 Of everything on this site, the K-65
22 silos scare the hell out of us worse than anything
23 else. And I want to also make you understand that
24 the K-65 silos are watched, they have 24-hour

1 surveillance cameras on these silos. The amount of
2 snowfall that lays on the top of them has to be
3 watched because of potential capability of them
4 caving in. They are continuously monitored. They
5 are continually tested for their structural
6 integrity, which is already gone. In the last five
7 years we've had three tornados come within a half a
8 mile of this site. Every time there's a severe
9 weather alert, a severe ice storm, a severe
10 thunderstorm warning, or, God forbid, a tornado or
11 a tornado warning, we get pretty antsy out here.
12 You know, I can't reiterate to you how the K-65,
13 and you can go back and ask anybody within DOE or
14 the regulators, we did a priority scale one day,
15 and that was at the top of the scale. That's the
16 number one concern at this site.
17 I haven't heard you talk anything
18 about the risk, the risk factors here, and that's
19 all we hear these days is risk assessment and risk
20 factors and how are we going to measure the risk to
21 the people. I'd like to know if you've done any
22 kind of comparison along with your research to look
23 at that, and if you have, we would like to see
24 that.

1 I think you probably know this, but
2 I'm going to tell you anyway, as I mentioned
3 earlier, how we have fought tooth and nail to get
4 this facility cleaned up. You said you live next
5 to Hanford. Hanford is probably far worse than
6 Fernald, although it's huge and more humongous than
7 us, that's for sure, and the budget is close.
8 I heard you talk earlier about how
9 expensive this process is and how it costs a lot of
10 money. Who's going to pay for it? We're not, I'm
11 telling you tonight, we're not paying for it. As a
12 taxpayer of this country, I won't pay for it, and
13 as somebody who lives in this community and who has
14 fought and argued and screamed and yelled at the
15 Congress people, and there's several of them here
16 tonight who will tell you that's exactly what we
17 have done, our cleanup money will not be used for
18 this research project.
19 How long is this going to take? You
20 know, on the news tonight I heard you say two years
21 for something and two more years for something
22 else. I want you to be real specific with me, very
23 specific. We have an agreement here, a signed,
24 sealed consent agreement that has been done three

1 times, and we're not doing it again.
2 I want to end that you need to know
3 that we're a concerned community here. We want you
4 to work with us. We want you to talk to us and
5 come in and meet with us because we're all willing
6 to do that. And not just one person behind closed
7 doors in secret meetings, but with open public
8 participation and open public debate and open
9 public process.
10 Again, we need real specific
11 information. Don't make decisions without us. Our
12 lives are at stake here, you know, we want you to
13 understand that. You have to think of us as well
14 as those that you can potentially save. For some
15 it's already too late.
16 I will reiterate to you, you listed
17 earlier your friends and your colleagues and your
18 mentors. I had an uncle who died of lung cancer
19 and brain cancer last fall, and I literally watched
20 this man die, and it ripped our hearts out to have
21 to do this. I had a 42-year-old aunt die of breast
22 cancer that I saw go from a vibrant woman to a sack
23 of bones, and it kills us to have to watch this
24 kind of stuff. We've lost three of our very dear,

1 good, dedicated FRESH members in the last year and
2 a half to one or another kind of cancer. So we're
3 not unfeeling people here. We care. But at the
4 same time we're concerned about our health and
5 safety too.
6 And I would ask that you do your
7 homework, and I am going to give you a whole stack
8 of homework to do tonight. And now I'm going to
9 sit down because I know there's a lot of other
10 people in this room that want to talk to you and
11 ask you some questions, but I would ask that my
12 answers be given back to me in writing, and I would
13 like them not in six months, I would prefer them in
14 like 30 days.
15 DR. FISHER: That's a challenge I
16 wholeheartedly accept. We have a similar activist
17 group in Richland. In fact, we have several. We
18 have one that is called HEAL, basically the Spokane
19 and the Dan Winters concern. We have another
20 activist group in Richland that is quite
21 different. Their message is to the Department of
22 Energy why aren't you doing more to use research
23 for developing treatments for cancer and other
24 diseases than you're doing. Why aren't you making

1 use of some of these valuable resource materials,
2 the scientific and technical skills that you have
3 at the Hanford site, the tremendous facilities to
4 cure common health problems. So we hear it from
5 both sides.
6 Let me see if I can be very specific
7 about these questions, can I real quick? Lisa, is
8 that what you intended?
9 MS. CRAWFORD: Yeah.
10 DR. FISHER: Can you give me a
11 minute to try to address very quickly some
12 preliminary responses to these?
13 MS. CRAWFORD: That's fine.
14 DR. FISHER: Do we have the
15 technology to extract radium from barium sulfate
16 stabilized sand tables? Let me just say that I
17 believe we do, but I'm not the expert in that
18 area. I've heard some proposals that make sense to
19 me. The same crown ethers that we're developing to
20 label radium to monoclonal antibodies have been
21 shown to dissolve barium sulfate and selectively
22 extract radium. I don't know how expensive it is,
23 but I know that it works because that's what we've
24 shown. So I'm not an expert in the technology to

1 extract, and I would defer on that particular
2 question to those who are specialists in the
3 process of separations, separations chemistry, and
4 the specific nature of these materials, but I'll
5 come up with an answer.
6 MS. CRAWFORD: Okay.
7 DR. FISHER: I'm not trying to avoid
8 that question, but I just plead ignorance on that
9 one.
10 How long will it take? I believe
11 that we should not impact on the cleanup schedule
12 here. I believe that we should make every attempt
13 to recover some of the radium during the process of
14 vitrification, before it's vitrified. That's my
15 own personal opinion. I'm not speaking for the
16 Department of Energy or any of its contractors. So
17 I think that in parallel we can have a side process
18 to recover some of this material. If we'd have
19 done it at the uranium, we could have had it done
20 by now, because the radium follows the liquid
21 raffinate. When uranium is separated from uranium
22 ore, uranium goes one way and the radium rich and
23 thorium are trapped and it goes the other direction
24 to the storage piles. So it will take some time to

1 develop this therapy and test it. It's taken us
2 nine years to achieve significant published results
3 using iodine 131 and the four or five antibodies
4 that we've tested. So that part will take time.
5 But it's worth it for those 65
6 survivors of lymphoma, our lymphoma clinical
7 trials, which are now going into phase three and
8 very close to FDA approval, and it's also worth it
9 for those approximately 25 leukemia patients that
10 are disease free after their treatment.
11 Fortunately for them, they were allowed to
12 participate in those clinical trials.
13 It's going to take us longer to
14 develop the radium 223 therapies than it will take
15 to develop the bismuth 213 and the actinium 225
16 therapies, which involve a whole different chemical
17 process, but we get all these isotopes from the
18 same source, so some take longer than others.
19 Where have I been? I'm just a little
20 guy, I'm a scientist. I've been here to Cincinnati
21 before. No one paid any attention to me the last
22 time I was here or very little. The other times
23 that I've been here, I served as a site safety
24 inspector for the Fernald site and conducted audits

1 of the internal dosimetry and bioassay programs.
2 So I am familiar with the site and have been for
3 many years, maybe ten years. But certainly we
4 don't get the recognition as scientists by
5 publications alone. It takes a little help from
6 the news media to bring these things to the
7 attention of those who are decision makers, the
8 politicians, the leaders of corporations, the
9 leaders of our government agencies, such as the
10 Department of Energy.
11 It's kind of interesting in Richland
12 we've been producing yttrium 90 for the U.S. cancer
13 research program for nuclear waste, and it has been
14 covered sporadically in the news media, but not
15 very much. It isn't a big focus area in Richland
16 because cleanup is the primary issue, but I think
17 little by little management and the Department of
18 Energy is starting to take note of the success that
19 we're achieving with the use of this isotope.
20 Secrecy, I don't know of any secrecy
21 in the cancer research because everything that we
22 do is completely open. We try to present this to
23 public meetings, scientific meetings, it's well
24 covered and well presented, but perhaps we aren't

1 very effective communicators, and so that's our
2 problem. But my research is completely out in the
3 open. I do hold a security clearance, but not for
4 any research work that I do in the area of cancer
5 therapy or radiation dosimetry.
6 As far as community relations, and
7 again, I'm going to put on my other hat, as a
8 professional health physicist, our primary mission
9 is to make sure that workers and members of the
10 general public do not receive harmful exposures of
11 radiation, exposures to radiation in excess of
12 recommended limits, limits approved and proposed by
13 international scientific agencies, and these are
14 very, very low. And those are the principles and
15 standards that I adhere to. We would never propose
16 any operation that is hazardous to either workers
17 or the community. And it's not okay to sacrifice
18 one to save another.
19 We do have some experience in the
20 handling of radioactive materials. We took, this
21 was about three years ago, we took a half a gram of
22 waste radium. We irradiated it in the FFTF reactor
23 at Hanford during its last run before it was shut
24 permanently down. We produced actinium 227 from

1 which we've been able to extract some radium 223.
2 This actinium 227 source, from one half gram of
3 radium, which was produced without any, as far as I
4 know, without any remarkable radiation exposure to
5 any worker or the public, we calculated the outside
6 doses, incidentally, from this operation, and it's
7 in the millionths of rad, it's a very small
8 fraction of the normal background dose. There have
9 been some radiation exposures, but these are in the
10 millionths of permissible levels, and this one half
11 gram at essentially no risk to anyone has produced
12 enough medical isotopes to provide 2 to 300
13 complete therapies every two or three weeks for the
14 next 20 years. So on one side there's a humongous
15 potential for therapy of cancer. On the other
16 hand, our experience has been the radiation
17 exposures have been negligible. We've been able to
18 handle the material safely, and I would propose
19 that same kind of an operation for this material
20 here. I mean we're on your side. We would not
21 tolerate anything but that.
22 Nobody paid any attention to us
23 either when we first talked about the production of
24 these materials. We even had this belief from some

1 of our scientific friends and colleagues, but I
2 think that they are beginning to understand and
3 respect what we can do.
4 The risks factors, I think I've
5 talked about that.
6 Who will pay for it? Oh, this is the
7 greatest question of all. Let me answer this in
8 two parts. The principal responsibility for
9 developing new isotopes for medical use is the
10 Department of Energy. There is no other agency
11 with that responsibility. It was the second of two
12 historical missions of the Atomic Energy Commission
13 when it was formed on January 1st, 1947. The first
14 mission was to produce nuclear weapons to protect
15 the country. The second mission was to develop
16 peaceful uses of atomic energy, and medical
17 isotopes was one of the major emphasis, and it
18 still is a priority, but you don't hear about it
19 very much, do you? And I think it needs to be
20 elevated to a more important priority.
21 When the Secretary of the Department
22 of Energy held their last press conference and
23 announced the principal missions of the Department
24 of Energy, that was not mentioned, it was not one

1 of her priorities. However, I can relate to you
2 that she is very interested in the applications of
3 isotopes for therapy. We know this because we've
4 gotten some feedback from her on some of the other
5 research we've done, but we've really struggled to
6 get any funding to support this research. We have
7 almost no research funding to support this at all.
8 It's being done on a shoestring. It constitutes
9 about 15 percent -- We have enough support for
10 about 15 percent of my time per year to work on
11 this. That's not a real high number.
12 MS. NUNGESTER: I'm sorry, Dr.
13 Fisher. I wasn't angry until you just said that.
14 We are residents who have lived by this plant out
15 here, and we've had no funds, we've had no titles
16 or anything else to be heard, and we've made
17 ourselves heard.
18 DR. FISHER: Let's take your
19 question.
20 MS. NUNGESTER: All right, I'll give
21 you my questions. I want a few answers as I ask
22 them. First of all, on your safe level, I want to
23 say one thing about that, it's based on the old AEC
24 from the atomic bomb survivors of Japan, it's too

1 low. It should be much, much higher. It's been
2 revised, it needs to be revised again.
3 DR. FISHER: I would agree with you
4 on that. The ICRP, the International Commission of
5 Radiological Protection, has just done that. Now
6 it takes, they've reduced the exposure limits by a
7 factor of about two and a half. That hasn't taken
8 effect among Department of Energy contractors yet,
9 but I'm sure that it will.
10 MS. NUNGESTER: I just want to
11 insert one comment here Lisa didn't cover. She
12 covered very well most of the things that should
13 have been said. Hanford people live miles and
14 miles away from that plant. They have very little
15 direct contact with those things unless they go
16 through the air. We live right on top of this
17 plant out here. There's a big difference.
18 DR. FISHER: It's a whole different
19 situation.
20 MS. NUNGESTER: Could you clarify
21 what material you think you need, the waste pits,
22 the silos, what material are you looking for?
23 DR. FISHER: What would be really
24 nice is out of 10,000 metric tons of sand,

1 basically what that is, there are about four and a
2 half kilograms, I don't know, something on the
3 order of ten pounds of radium.
4 MS. NUNGESTER: In the silos?
5 DR. FISHER: Yes. And it would be
6 nice, I think, to be able to recover somewhere
7 between 10 percent and 50 percent of that. What
8 we're talking about is a half a pound to five
9 pounds of radium. That would be nice, it would be
10 nice to recover that.
11 MS. NUNGESTER: Okay. As you
12 talked, you'll have to correct me if I heard you
13 wrong, but this is what I heard, you said thorium
14 breaks down into a daughter product of radium 223,
15 did you not say that? Isn't that something you can
16 use, radium 223, thorium breaks down into that?
17 DR. FISHER: It breaks down into
18 actinium 227, which has a second daughter, which is
19 radium 223, right.
20 MS. NUNGESTER: Okay. You can use
21 that, right?
22 DR. FISHER: Yes.
23 MS. NUNGESTER: Down at the Nevada
24 Test Site you got all the thorium in the world out

1 there.
2 DR. FISHER: But those isotopes
3 aren't there.
4 MS. NUNGESTER: Why aren't they
5 there?
6 DR. FISHER: They're not there
7 because they don't exist there.
8 MS. NUNGESTER: We ship thorium by
9 the barrels out there.
10 DR. FISHER: Natural thorium is
11 thorium 232, but the thorium 229 and the thorium
12 227 don't come in that indication. They're not
13 present. The thorium that is present is thorium
14 232, thorium 228, from which we get other isotopes
15 but not the ones we're looking for. They don't
16 exist in those chains. That's why we have to put
17 them in a reactor and make them. Good question,
18 but it's the wrong --
19 MS. NUNGESTER: We have very little
20 sympathy for how little you are because you
21 couldn't be much littler or smaller than we are.
22 We have no college education after being through
23 this process for ten years.
24 MR. STEGNER: Norma, can you give me

1 just one more and then we'll try to go to the back
2 of the room and front of the room by rotating and
3 giving everybody a chance to ask questions.
4 MS. NUNGESTER: Wait a minute, he
5 just wanted to talk, I'm going to ask my questions.
6 MR. STEGNER: Yes, you are, Norma.
7 Just ask one more question so we can refer to some
8 other folks.
9 MS. NUNGESTER: Okay, yes, I can do
10 that. All right, we already discussed the proposal
11 about taxpayers.
12 DR. FISHER: I didn't finish the
13 second part of that answer, could I do that real
14 quick? The primary responsibility for new isotopes
15 is the Department of Energy. When you develop the
16 technology, guess who takes over? The hospitals,
17 medical insurance. It costs now about $3,000 per
18 patient to treat with isotopes using iodine 131 of
19 monoclonal antibodies. We hope to be able to
20 reduce that to about $500 per patient with radium
21 223, but who will pay for it? It will be the
22 market.
23 MS. NUNGESTER: For the research
24 it's the taxpayers that pay for it, and then when

1 the proceeds come in, the big wigs take it, the
2 taxpayers don't get that.
3 Thorium, you said something about the
4 half life of bottled water, you were talking about
5 eleven days or whatever. Thorium has a half life
6 of thousands of years.
7 DR. FISHER: That's true, but the
8 isotopes that we're looking for have half lives of
9 eleven days.
10 MS. NUNGESTER: One more quick thing
11 and I will sit down because it's the last thing I
12 have. Iodine 131, you talked about using that as
13 radiation. I don't pretend to know anything about
14 that in treating patients for cancer. It's a
15 wonderful thing if it cures them, but I do know
16 when it's overdone, and it has been, then it causes
17 cancer in people and it can kill them. Thank you.
18 MR. STEGNER: There's a lot of
19 people in here, is there anyone in the back of the
20 room? There's another microphone back there.
21 Gary.
22 UNIDENTIFIED SPEAKER: Yes, sir,
23 thank you, Gary.
24 Dr. Fisher, in your presentation you

1 talked a little bit about the recovery of radium.
2 Can you elaborate on what's involved in the
3 recovery, the storage? Do you have plans of
4 leaving the radium on-site, taking it off-site and
5 drawing from it; are you going to take it with
6 you? What are your plans, can you elaborate a
7 little bit on the recovery of radium?
8 DR. FISHER: The Department of
9 Energy will be developing a plan, I hope, for
10 managing radium. But such a plan does not exist.
11 UNIDENTIFIED SPEAKER: What are your
12 ideas?
13 DR. FISHER: My ideas would be the
14 following. You collect radium from the process
15 here, put it in a shielded container, seal them up,
16 ship them to Hanford, where we open them up, purify
17 them, re-encapsulate them, ship them to Oak Ridge
18 in small capsules of about 20 grams each. Put them
19 in a reactor, irradiate them, ship them back to
20 Hanford, open them up, process out the isotopes,
21 separate the useful from the waste material,
22 dispose of the waste material at Hanford, remove
23 the isotopes for isotope generators for hospitals.
24 It's a very complicated process. It's not easy.

1 MS. CRAWFORD: What do you think the
2 residents around Hanford and Oak Ridge and across
3 the country with this stuff going back and forth
4 are going to say?
5 DR. FISHER: That's a good
6 question. You know, we do use in this country a
7 lot of medical isotopes shipped every day to
8 hospitals; iodine 131 is used almost in every
9 hospital in the country that has a nuclear medical
10 program. The use of isotopes is very common, and I
11 think it would be treated the same way we treat
12 isotopes used today. I'm sure that many of us in
13 this audience have benefitted from this
14 technology. It's very safe, very effective, not
15 completely without some hazards and some problems
16 from time to time, but it's part of our modern
17 medicine and medical society. It's very common.
18 Gary.
19 MR. STEGNER: We'll come back to the
20 front of the room now. Yes, sir. Pam, you'll be
21 next.
22 MR. GRAHAM: I'm John Graham with
23 First Power. The question was asked about the
24 process that's been developed that might recover

1 this material, radium particularly. There are two
2 processes; one, of course, is the ion exchange
3 process, and the University of Iowa over 35 years
4 ago was working on that extensively with that
5 process, I think, in order to separate the
6 radioactive uranium. So that process is pretty
7 much well-known throughout the world.
8 There's another process that's called
9 the chloride process or the halogen process, and
10 interestingly approximately 35 years ago there was
11 an ion exchange company in Cincinnati that was a
12 leader in this kind of technology. So those
13 technologies are in reserve and can be used.
14 The Russians have developed a process
15 for extracting radium from very small quantities,
16 much less than what exists in this system here.
17 DR. FISHER: Thank you very much.
18 I'm not an expert on separations, but I'll defer
19 that to the experts. I know FERMCO has a number of
20 experts in this area, and I'm sure the Department
21 of Energy has quite a team of scientists who can
22 work on this problem.
23 MS. DUNN: I'm just going to fire
24 you out some questions here, and I haven't written

1 them down to give them to you, but I would like
2 answers too.
3 DR. FISHER: Can we do one at a
4 time?
5 MS. DUNN: Sure. Did you know that
6 one of the alternatives in the feasibility study --
7 it was the feasibility study, right -- of OU-4
8 looked into extraction, and it was not considered
9 an alternative due to the cost and the increased
10 risk to the workers; have you reviewed those
11 documents?
12 DR. FISHER: No, I have not.
13 MS. CRAWFORD: That's on your
14 homework list.
15 MS. DUNN: You should ask them,
16 because this was looked into during the feasibility
17 study of Operable Unit 4.
18 My second question, we don't have
19 thorium 229 on site, but we do have quite a bit of
20 thorium 228, and since the radium has to go into a
21 reactor and be bombarded to create that which
22 you're looking for anyway, why can't you use the
23 thorium 228 to achieve the same radioisotopes that
24 you're looking for?

1 DR. FISHER: Good question. Let me
2 answer that one in a hurry. When you do this, the
3 conversion is not a hundred percent, and thorium
4 228 is a contaminant that we don't want. It's an
5 unacceptable contaminant, so you cannot separate
6 thorium 228 from thorium 229. Now there is some
7 possibility of separating the daughter products
8 later on, actinium from thorium, but these are some
9 technical considerations that we've studied at some
10 detail, and if the desired product is actinium 225,
11 for example, then you can't start with thorium 228.
12 I wish you could, we've looked at it, we hoped that
13 that would be a solution, but it isn't.
14 MS. DUNN: But don't you also have
15 other isotopes in the process with the thorium 229
16 that you also have to figure out how to get rid of,
17 the same as you would with the 228?
18 DR. FISHER: Exactly.
19 MS. DUNN: The thorium 228 is like
20 in barrels over at the site. It would be ready to
21 go.
22 DR. FISHER: There's a lot of
23 thorium here and elsewhere. We know of kilogram
24 quantities of thorium 232, thorium 228, but it just

1 doesn't work.

2 MS. DUNN: My next question is are

3 you aware that there's material, the other part of

4 the K-65 material, that part of it came here, part

5 of it went to Niagara Falls, New York and it's

6 still sitting in a basement up there in sludge

7 form? Have you looked into that material rather

8 than what is in these silos that has other

9 contaminants mixed in with it?

10 DR. FISHER: We haven't looked at

11 that. I'm aware of the situation. Some of the

12 local people here called it to my attention. But,

13 no, we haven't looked at that.

14 You do remind me of something I

15 should mention. We have scoured the country for

16 these isotopes in prepared forms. We're aware that

17 many of them have been disposed of in the last ten

18 years. Without, you know, maybe some of this would

19 be unnecessary if they hadn't already been thrown

20 away. The Europeans have a nice actinium 227

21 source, but they won't give it to us. They won't

22 even let us borrow it.

23 We've looked at a number of different

24 options, like I mentioned in my earlier

1 presentation. I'm not even certain that extraction
2 of the Fernald radium is a solution either. We're
3 looking at that as an option. I'm not convinced
4 that we can overcome all the obstacles either. So
5 I guess basically my philosophy is we're looking
6 for radium, we'll accept it from wherever we can
7 get it.
8 MS. DUNN: Have you discussed with
9 the people on-site who have been working on this
10 issue the fact that you could -- I mean you're not
11 talking near term use for this radium, correct?
12 DR. FISHER: No, this is long term.
13 MS. DUNN: You're talking long term,
14 and if you don't have an extraction process already
15 validated, which from what you've said, you don't
16 have a process of extraction that is even close to
17 even going through a validation process, why aren't
18 you looking into a process then to extract this out
19 of a vitrified material? Vitrification does not
20 destroy radionuclides. If it was that easy to
21 destroy radionuclides, we wouldn't have a problem
22 on what to do with this waste. Have you talked to
23 any of the people on the site that deal with this?
24 DR. FISHER: Yeah, we have. That

1 was the purpose for the last two years of
2 discussion at the site, believe me.
3 MS. DUNN: The crew people, you've
4 talked with the crews?
5 DR. FISHER: Yes.
6 MS. DUNN: I guess my next question
7 is you've got a great and promising research here,
8 but at what point are we here between research and
9 actual application, and what is your breakthrough?
10 I mean this research has been ongoing since the
11 1930's to develop a cure for cancer. People every
12 day think they have come up with a cure for
13 cancer. What is the breakthrough with this
14 particular technology that makes it the one?
15 DR. FISHER: That's real simple.
16 First of all, tumor specific targeting agents is a
17 breakthrough. It's only been within the last five
18 years that we've had sufficiently good antibodies
19 to do this. That's the first breakthrough.
20 Another breakthrough, the method of
21 mass producing this protein in the laboratory, a
22 Nobel prize winning achievement. Another
23 breakthrough would be the ability to complex the
24 short-lived radioisotope, something that has only

1 been feasible in the last one year, without which
2 we can't use it, it doesn't work.
3 MS. DUNN: So where are you between
4 research and application and the process of
5 validation of this procedure?
6 DR. FISHER: Well, the reason why
7 we're so slow making any progress is this work has
8 not been funded by the Department of Energy. It
9 has been reviewed.
10 MS. DUNN: By who?
11 DR. FISHER: By outside review
12 committees that the Department of Energy has set
13 up. The reviews were meritorious. It didn't lack
14 for scientific merit. However, the response that
15 we had was that the Department of Energy has a
16 limited budget in nuclear medicine and cannot
17 support this at the present time. That's the
18 frustration of science.
19 MS. DUNN: But my question is where
20 are you between research and actual application,
21 what is the approximate -- where are we in that
22 cycle?
23 DR. FISHER: In the attempt to use
24 either actinium 225 or bismuth 213, which come from

1 the other approach, bismuth 213 has been provided
2 to the clinic. It will be administered to patients
3 this year. But those trials will begin, they're
4 scheduled to begin yet in 1995, this fall at
5 Memorial Sloan Kettering.
6 As far as using radium 223, our
7 approach will be first to experiment next year in
8 animals and see if we can do two things, achieve
9 tumor uptake and tumor destruction.
10 MS. DUNN: So you're looking at
11 maybe 10, 15 years before you actually need the
12 radium from Fernald?
13 DR. FISHER: We're looking at maybe
14 -- It depends on which side you go to. We're not
15 as dependent on Fernald radium as the other set of
16 isotopes. There are two parallel efforts ongoing.
17 We're a tenth as dependent on radium as they are.
18 We have adequate research supplies of these
19 isotopes to last us five or ten years. We don't
20 have adequate supplies for any clinical
21 applications. So again, we're going -- before this
22 goes into the clinic, we're at least five years
23 away.
24 MS. DUNN: So you would have time to

1 work on getting it out of vitrified material?
2 DR. FISHER: Yes, I think so.
3 Those are real good questions, I want
4 to congratulate you on those, especially the
5 technical ones.
6 MR. STEGNER: Before we come back to
7 the front of the room, are there any more questions
8 in the back of the room? Did I see a hand back
9 there? Yes, sir.
10 UNIDENTIFIED SPEAKER: How much
11 longer would it take to get it out?
12 DR. FISHER: The radium from
13 Fernald?
14 UNIDENTIFIED SPEAKER: Yes.
15 DR. FISHER: I don't know. Again,
16 that's not my area of expertise. I'm a medical
17 physicist. I'm not an extraction chemist, nor a
18 process engineer, but you certainly have people
19 here that can answer that.
20 Our message is simply that this is
21 important stuff to hang on to, not to throw away
22 permanently, at least some portion of it. We don't
23 know of any other readily available sources in that
24 magnitude.

1 MR. STEGNER: There's a question
2 here in front.
3 MR. SPUKLA: Good evening. My name
4 is Arnold Spukla. I live in Butler County. I
5 would like to just follow up on the point of
6 extraction from vitrified material. It seems to me
7 that is a crucial issue, and the director of DOE
8 referred to that point. I think you referred to it
9 as a win/win possibility. My question is: Is it
10 in fact possible, have we demonstrated the possible
11 extraction of radium from the vitrified material;
12 is that a technology we have?
13 MR. CRAIG: I, like Dr. Fisher, am
14 not an expert in chemical extraction. We do have
15 some people here tonight that could talk about
16 that. I've been told that based on the best scale
17 studies we have done, we could extract the radium
18 from the vitrified material. I think that's
19 something we even talked about with Dr. Fisher and
20 his people a little bit more, but based on what
21 I've been told, yes, it is a possibility.
22 MR. SPUKLA: It seems to me that has
23 to be part of the win/win situation. Win means, as
24 far as I'm concerned, that we do not slow down the

1 cleanup process in any way. They're on an
2 accelerated process, we need to do that.
3 MR. CRAIG: We agree.
4 MR. SPUKLA: If at some future time
5 there is a possibility of extracting radium from
6 vitrified material, Dr. Fisher wins too.
7 MR. CRAIG: I agree. If we have
8 some time, we could talk a little bit more about
9 that in some more detail. I guess another thing to
10 keep in mind is we are not planning on a full-scale
11 vitrification of this material for about three
12 years, 1998 or so. So we do have some other time
13 to discuss this a little bit more.
14 Clearly the communication between
15 people doing the research at a site like Fernald
16 has not been what it should be. One of the
17 problems we've had that we probably didn't describe
18 it very well is that the people who fund the
19 research in the isotope area are a whole different
20 organization than we deal with in Washington, whose
21 sole mission is cleanup. And whatever problems the
22 researchers have been having with the nuclear
23 energy people and supporting the research, that has
24 not been communicated to the environmental

1 management organization within DOE. That is a
2 problem. We will talk to those people soon. But,
3 you know, we report to different people, it's
4 different funding, and there has not been the
5 communication there should be.
6 MR. SPUKLA: You need to have an
7 annual dinner or something.
8 (Applause.)
9 MR. STEGNER: Why don't we have Edwa
10 and then one gentleman here, and then maybe we'll
11 take a total of three more questions, and we'll
12 close it and have a break.
13 MS. YOCUM: Okay, Dr. Fisher, when
14 you were mentioning the radium isotopes, you said
15 they're used only for liquid tumors. Now, what
16 parts of the body are affected by the liquid
17 tumors?
18 DR. FISHER: The clinical trials
19 that I'm involved with personally for the team of
20 physicians in Seattle, we are treating what we
21 consider the hematologic diseases, lymphoma and
22 leukemia. These are tumors of the blood system.
23 So when we say they're liquid, they're liquid in
24 the blood and liquid in the lymphatic system of the

1 body. They're not solid tumors like the hard
2 tumors that we're more familiar with.
3 MS. YOCUM: What about the tumors
4 that are found in the liver and the colon?
5 DR. FISHER: Those are solid tumors.
6 MS. YOCUM: Those are solid tumors.
7 So really there's only one type of cancer right now
8 that is affected, and that's the leukemia.
9 DR. FISHER: Right now monoclonal
10 antibodies with iodine have been successful against
11 leukemia and lymphoma. They have not been notably
12 successful against any other forms of cancer,
13 primarily because the radiation is the wrong
14 radiation. That's the beta versus the alpha. We
15 believe that the alpha particle emitters will be
16 effective against the solid tumors that are so
17 problematic, especially the little, small
18 micrometastases that cause tumor recurrence.
19 That's the big problem in cancer therapy, is the
20 recurrence, the relapse of disease after the
21 primary tumor has been blasted with radiation or
22 with chemicals.
23 MS. YOCUM: Okay. I have a picture
24 here of a health map that we have and we use it as

1 a visual aid for the community, and it's a cancer
2 map. And we have on the average three communities
3 that make up this area, and the total population is
4 6,000, approximately 6,000. And the people who
5 have really health concerns are represented by pins
6 on this map, and there's 270 pins on this map and
7 there's 260 of them with cancer. And this is one
8 of our reasons why we cannot have this K-65 waste
9 laying around the Fernald site because it was
10 emitting its radon, it is just causing more fear,
11 health concerns for our community.
12 And I notice you were able to make
13 your comments in the newspaper to Mr. Gallagher,
14 and so I don't know if Mr. Gallagher is here, but I
15 would like to make my comments to Mr. Gallagher
16 because it seemed to be just a one-sided story, and
17 so if you would take a few minutes and relax and
18 get your thoughts back, I'm going to read a comment
19 to you. And it's similar to what Lisa has asked
20 also. I'm sorry I have to read it, I am a bit
21 nervous, so I read better than I speak.
22 Where were these people before OU-4's
23 Record of Decision? They had two years to sit at
24 the table to discuss this issue of the largest

1 supply of radium in one spot. They had 40 years to
2 design the needed technology. Cancer has been
3 around a long time. Now that the residents found
4 the answer to remove one of the threats to their
5 life span, the medical researchers try to pull
6 their weight by placing a guilt trip on the Fernald
7 residents.
8 I am not against finding a cure for
9 all types of cancer, I like positive results such
10 as removing the cancer source off-site so that my
11 life span will not be shortened any more than what
12 it has been. I have not read that there is a
13 definite process for extracting radium. All I hear
14 is scientists think they can extract the radium
15 from Fernald K-65 waste. Dr. Scheinberg's quote,
16 "Radium is needed to produce the medical isotope
17 we would need in this process to try and cure
18 cancer." Owen Lowe, director of the isotope
19 production and distribution for DOE's isotope
20 program office in Germantown, Maryland, and this is
21 also the location of DOE headquarters, and still we
22 heard nothing from DOE. Lowe quoted he is "waiting
23 for results to determine whether it's worth saving
24 radium at Fernald." If the residents sat around

1 waiting for results, Fernald would still be
2 contaminating the groundwater and the air. The
3 radon emissions from the deteriorating K-65 silos
4 have possibly affected 260 residents. How many
5 more residents will be affected by radon before the
6 medical research teams have the technology to
7 extract radium, and that's been one of the many
8 questions asked, how long is it going to be taking
9 you to find the answer.
10 And also, the weather in this area,
11 as you have noticed in the past month, is very
12 humid. This humid weather causes inversions around
13 the K-65 silos. That's causing the leaking radon
14 to remain low to the ground. For example, if
15 anyone smokes and it is going to rain, you will see
16 smoke laying low in your house. That's what radon
17 is doing around the site.
18 I'm not against cancer research.
19 Here in the Fernald area that covers three
20 communities, total population about 6,000, with
21 lung cancer, thyroid diseases, multiple
22 miscarriages that do not get registered,
23 stillborns, brain tumors, I ask you to show me now
24 that the medical research teams have the technology

1 to extract the radium from the K-65 silos and that
2 it will benefit the emotional distress and the
3 cancers that the community now faces. I will be
4 the first to congratulate you if you can.
5 And to DOE headquarters, don't make
6 this a budget issue, cleanup budget versus research
7 budget. Here in Fernald, the community, Ohio EPA,
8 US EPA, and Fernald/DOE have worked for ten years
9 to stop the effect of radon to its residents. We
10 now have a Record of Decision which includes a
11 solution. Does the medical research team have a
12 solution? Thank you.
13 MR. STEGNER: Thank you, Edwa.
14 Tony, I think you were next.
15 MR. SEARS: My name is Tony Sears,
16 I'm a Morgan Township Trustee, and I'd like to
17 apologize, I came to this meeting thinking that
18 this was concerning the task force. I know you
19 changed the agenda, and that's fine, and I don't
20 mean to belittle you in any way.
21 MR. STEGNER: I tell you what, Tony,
22 we're going to break and we're going to have an
23 open mike. If you have a comment on something that
24 is not related to radium, we'll get to you then.

1 MR. SEARS: Okay. That would be
2 fine. It's not relevant to this, but it's
3 something I would like to say.
4 MR. STEGNER: I understand, and you
5 will definitely have your time when we come back
6 from our break. Yes, ma'am. We'll take about ten
7 minutes and finish up here.
8 UNIDENTIFIED SPEAKER: Dr. Fisher, I
9 wanted to say a kind word to you. I grew up in
10 Butler County, but I feel that I'm a citizen of the
11 world first, and it is a cancer ravaged world, and
12 it's not to minimize the great work that FRESH has
13 done in the face of terrible odds, but I do want to
14 thank you for bringing this to light, and I do feel
15 I speak for the community, where as you find
16 yourself not unlike Dr. Salk and Dr. Sabin when
17 they found the cure for polio, that we're not at
18 least open to hearing about this research.
19 (Applause.)
20 UNIDENTIFIED SPEAKER: I also
21 wondered how you would suggest citizens who are
22 interested in learning the facts as to whether this
23 is sound science can shine a light on this and keep
24 this open and out in the public so that our

1 government can continue to focus on this?
2 DR. FISHER: Thank you, those are
3 really good comments, in particular on Dr. Salk and
4 Sabin.
5 I would like to issue a challenge to
6 you citizens of Cincinnati. I'm certainly not an
7 advocate of either radiation exposures of the
8 general public or workers or delaying the cleanup
9 schedule. That's never been part of my agenda. My
10 interest is in developing a science that will be
11 beneficial to all of us, to our relatives and
12 perhaps even myself if I were in need. We work
13 very hard under difficult conditions to do this.
14 But the people that are associated with me on these
15 projects and the names that have been mentioned by
16 Mike Gallagher in the press, these are the best and
17 brightest medical scientists I know. They are
18 truly outstanding people for their medical
19 expertise. They understand the scientific
20 principles involved in the therapy of cancer, much
21 more than I do myself. I'm a radiation physicist
22 with an interest in radiation protection.
23 And my challenge for the community
24 action people and for the citizens in general is

1 let's find a common solution in which we all
2 benefit. The one that you're happy with. Let's
3 find a solution. Let's suggest to the Department
4 of Energy that they take a leadership role in this
5 area so that people like me don't have to make
6 decisions for them which I'm unqualified to make.
7 Let's continue to raise this issue.
8 Let's let our representatives in Congress know that
9 there's some important issues here to be
10 addressed. I noticed in the Congressional budget
11 this year a tremendous budget for high energy
12 physics, but not a similar increase in nuclear
13 medicine research. In fact, a decrease. High
14 energy physics is great for understanding the
15 origins of the universe and how particles smash
16 together and create smaller particles, but it
17 doesn't go very far in treating cancer. Yet the
18 high energy physics budget is really high this
19 year. Nuclear medicine research is really
20 struggling. So we have a mission and an
21 opportunity here.
22 I want to congratulate the FERMCO
23 people for bearing with us. We had no idea that we
24 were going to cause this kind of an uproar in

1 Cincinnati, and we feel for them because we know
2 what a tough job they have. We simply are looking
3 to utilize a valuable resource on the 50th
4 anniversary of the destructive use of atomic energy
5 and the hundredth anniversary of discovery of
6 radioactivity, and I would challenge the Department
7 of Energy to work with us on this.
8 Sometimes I'm out of my league in
9 this area, but I want to thank you for giving me
10 the opportunity to come tonight and address you as
11 the representative for the DOE Richland operations,
12 as a private citizen, as a scientist, as a member
13 of the faculty of the University of Washington, and
14 as a member of the, as an affiliate investigator
15 and clinical researcher of the Fred Hutchinson
16 Cancer Research Center.
17 MR. STEGNER: One last question
18 here, sir.
19 UNIDENTIFIED SPEAKER: Dr. Fisher, I
20 have a question I think you will not have any
21 difficulty in answering. Could you give us your
22 name, address, and phone number.
23 DR. FISHER: I'm also on the
24 Internet.

UNIDENTIFIED SPEAKER: All we want to know is where we can get a hold of you.

DR. FISHER: The easiest way is to write to me, Darrell Fisher, D A R R E L L, F I S H E R, my mailing address is [redacted]

UNIDENTIFIED SPEAKER: [redacted]

DR. FISHER: [redacted] I don't claim to be one but that is the name of the street I live on, [redacted]

UNIDENTIFIED SPEAKER: Richland, just the way it sounds?

DR. FISHER: Yes, [redacted] My phone number at work is 509-375-6852. My employer is Battelle Memorial Institute, Pacific Northwest Laboratory. We're a nonprofit research contractor for the U.S. Department of Energy in Richland, Washington. My address at the laboratory is simply Post Office Box 999, same city and zip code. I'll get your letters, I promise to respond to you and I will answer in writing within six months, probably less.

UNIDENTIFIED SPEAKER: We've had a lot of discussion and there's a lot of us that want to ask questions. I understand your time

1 schedule. We have a Saint Street in Butler County,
2 so I know how to spell it. However, I want to
3 thank you personally. We've all had some terrible
4 tragedies from cancer, and I know it's difficult to
5 face a hostile audience. I'm from cleanup in
6 Butler County, we've gone through the same thing.
7 You can't get the attention of authorities until
8 you organize and you do something, it's very
9 difficult, it's frustrating, but I don't think we
10 should take that out on you, and I want to tell you
11 I personally as a member of cleanup want to thank
12 you very much. We want to follow up on why
13 something like this can't be done.
14 DR. FISHER: I sure want to thank
15 you for those remarks.
16 UNIDENTIFIED SPEAKER: Thank you.
17 (Applause)
18 MR. STEGNER: Dr. Fisher, on behalf
19 of the Department of Energy and Fernald, I
20 certainly want to thank you for taking time to
21 answer questions. I know we at the Department
22 appreciate your presence here. I think you've been
23 a great help to us. Hopefully we will have you
24 back again sometime to attend a workshop on this

1 subject because I don't think it's going to be a
2 closed subject tonight. I'm sure of that. We will
3 continue our public involvement on this issue and
4 other issues at Fernald.
5 For right now we're going to take a
6 break. Those of you who want to leave certainly
7 can. We will reconvene in probably about ten
8 minutes for some remarks by our regulators, and we
9 will have an open microphone then.
10 (Brief recess.)
11 MR. STEGNER: Let's go ahead and get
12 started, shall we folks? Let's everybody grab a
13 seat so we can resume and get this thing over with
14 in the next 30 or 40 minutes.
15 I'll tell you what we'll do, since
16 we've been sort of diverging from our agenda all
17 night, instead of starting off with comments from
18 US EPA, Tony, you've been very patient all night,
19 why don't you go ahead and give us your comments.
20 And then we'll, if there's nobody else who wants to
21 speak, we'll pick up then with US EPA. Tony.
22 MR. SEARS: What I'd like to speak
23 about is the Fernald Citizens Task Force. Of
24 course, their report came out and, like I said

1 earlier, that was the reason I came, although,
2 granted, that was interesting and we all needed to
3 know what was going on there, but one of my
4 questions is that I found out some information that
5 I think is real pertinent and probably should have
6 been brought up to the task force, and I don't know
7 whether it was or not, but hopefully we can find
8 out, and I am just going to go through the
9 information that I have here and you'll have to
10 take this at face value.
11 I've done some researching and also
12 FERMCO and the Department of Energy is aware of
13 this. I brought it up at our trustee meeting last
14 night to our Fernald envoy. Mac McCullough, he's
15 been working on it, and I think Pete's been working
16 on it. They called me back today with a few
17 answers, but it's something I think should be
18 brought up and maybe not swept under the carpet and
19 probably researched.
20 A couple of weeks ago a man called me
21 that is a consultant for a mining company in the
22 State of Washington, and he informed me of the
23 following information. There's a pit in Eastern
24 Washington State that's outside the town of Ford,

1 Washington. It's a former uranium mining mill.
2 They have a tailing pit that was never filled, and
3 it's been there for at least ten years. Now this
4 pit is lined, it has a monitoring system. There's
5 a local citizens committee, it's called the
6 Citizens Monitoring Committee. They have approved
7 putting what he classified as 11E2 material and
8 explained to me that that could consist of
9 contaminated uranium, thorium, radium contaminated
10 materials. Let me restate that, materials
11 contaminated by uranium, thorium, and radium.
12 They have seen the reports from
13 Fernald and sort of been keeping tabs on it, and
14 according to the information that's been provided
15 through FERMCO and the Department of Energy that
16 they have pursued theirselves, they say that they
17 can take the material that is proposed to be put in
18 the on-site contaminant cell. They have a permit
19 in the State of Washington to do this. They can
20 take between 45 million and 50 million cubic yards
21 of this material. They're selling space in this
22 pit to pay for the reclamation of the mill and the
23 mine site, so this is an EPA directive that they're
24 having to do this. This is, according to him, this

1 is a private venture and it's not for profit. It's
2 a private venture, but it's not for profit and the
3 money is used to reclaim the site.
4 Recently, within the past few weeks,
5 they have been in contact with representatives from
6 the Department of Energy and FERMCO. And according
7 to the OU-2 ROD, it appears that they can take the
8 material proposed for the on-site storage cell.
9 Now, they told me that based on the amount of the
10 volume that would be taken from the plant or from
11 anywhere else, more material, less cost, that they
12 can haul this stuff out of there for half of the
13 price that Envirocare estimated they could haul it
14 out for. They propose using the rail with
15 internodal containers, the containers would never
16 be opened from when they leave the plant, they're
17 sealed at the plant and would never be opened again
18 and put in this pit. They expect to be operational
19 in Spring of 1996.
20 Now, according to them, the
21 Department of Energy was aware of this pit through
22 Oak Ridge, Tennessee because they have been trying
23 to get it licensed for the past four or five
24 years. They now have their licensing. So one of

1 my big questions concerning this is was the Task
2 Force made aware of this when it come to the
3 decision that they had to decide whether or not to
4 put this storage cell on-site, and if they weren't,
5 why weren't they, why wasn't this pursued? Is this
6 possible? The Department of Energy has been in
7 touch with them, these people seem to think so.
8 Yet the Department of Energy says it's not.
9 There's a lot of questions concerning
10 this that need to be answered because we went
11 through a lot on this storage cell, and many, many
12 people have battled and fought and lamented over
13 it, and I don't hardly think it's fair that if
14 there's a site available to put this stuff at half
15 of the cost to haul it out, that the decision was
16 made to put an on-site storage cell over our
17 aquifer, and also that if the Department of Energy
18 and FERMCO was aware of this, why did they not
19 notify the Task Force so they could pursue it. So
20 that's it.
21 MR. STEGNER: Thanks, Tony. John,
22 do you want to --
23 MR. APPLEGATE: Let me just respond
24 to that. This is news to me and so I guess I have

1 the same question you do about that. One thing I
2 would say, though, is that the availability of a
3 place to put it off-site, there's always been the,
4 at least the potential availability of a place
5 elsewhere in the country for it. The question has
6 been more issues of whether other states would be
7 willing to accept it, what about the
8 transportation, which, as you know, would be a huge
9 amount of volume traffic through the local
10 community. So it's something which I'm glad you
11 brought to our attention. I will pursue this with
12 the Department in parallel with you, or any help
13 you can give us would be appreciated and see where
14 that stands. So thank you for the information and
15 we'll certainly look into it. It's the first I've
16 heard of it, and I think that's probably the case
17 for others too.
18 MR. SEARS: And I think that's a
19 shame, right now is the first you've heard of it.
20 MR. APPLEGATE: Well, I would
21 reserve judgment on that. You obviously got kind
22 of a sales pitch for this locale, and that may or
23 may not --
24 MR. SEARS: I say take it at face

1 value.

2 MR. APPLEGATE: Exactly, and I think

3 you understand that as well I do. So before

4 deciding that something has been withheld, I would

5 like to know more about it, but I would like to

6 know more about it, so thank you.

7 MR. CRAIG: I can tell you what I

8 know about it, which is not very much. Dennis Carr

9 may want to get up and talk. I found out about it

10 today as a matter of fact. I think there have been

11 either superficial or some recent discussions maybe

12 over the last week, but as I understand it, our

13 material would not meet their waste acceptance

14 criteria, and, therefore, would not be able to go

15 out there anyway, but Dennis has explored this a

16 lot more than I have. Why don't you talk, Dennis.

17 MR. CARR: About a week ago I came

18 in contact with the consulting firm that you're

19 referring to. They're out of Denver, Colorado.

20 They're basically a broker for the Dawn Mining

21 Company, which has this facility out at Ford,

22 Washington. About a week ago they contacted me,

23 and I requested a copy of their license with the

24 State of Washington. In that license, I reviewed

1 it just recently, and in that license basically it
2 limits this, as it was previously referred to, to
3 11E2 by-product material. Just like in the health
4 waste business we have different classifications of
5 waste, like sanitary waste, landfill waste, also in
6 this area of waste we have different
7 classifications of waste, one classification is
8 11E2 by-product material. 11E2 by-product material
9 basically are the wastes coming from the extraction
10 of uranium from ores.
11 Now the original process at Fernald,
12 and specifically the K-65 material, would meet the
13 classification of 11E2. However, the concentration
14 of radium in the K-65 residues far exceed by over
15 an order of magnitude the concentrations that would
16 be allowable to be received that the Dawn Mining
17 Company has set, which leaves the rest of the waste
18 at the site, and really by definition of the site
19 here, the materials at Fernald would not meet the
20 definition of 11E2 by-product materials. In
21 general the waste came from many -- much of the
22 waste at the site came from the processing of
23 recycled materials that was already in the source
24 material. It was not waste being derived from the

1 original extraction of uranium from the ores. The
2 bottom line, by definition, we really would not
3 meet the definition of by-product.
4 Additionally, at the site, as you
5 know, we have concentrations of contaminants of
6 radionuclides that are not naturally present in
7 uranium ores. For example, the fission products
8 and transuranium that are present in minute
9 quantities in our soils, in our pits, in our
10 material at our site are really not the same type
11 of materials that are to be present in the
12 materials that are at the Dawn Mining site, and
13 they are not on the waste acceptance criteria that
14 was within the license issued by the State of
15 Washington to the Dawn Mining Company.
16 So the bottom line, a preliminary
17 review is that we have different contaminants here
18 in the operable units. It is true that maybe
19 Operable Unit number 2's materials, which have very
20 low concentrations of materials, that you don't
21 particularly see some of the other isotopes in OU-2
22 as you do in the other OU's, but those isotopes are
23 present, and they would not be permissible to be
24 received under the current license at the Dawn

1 Mining Company. So basically as far as I can see
2 it right now, is that by definition by license they
3 would be very restricted from receiving any
4 material from the Fernald site. That's basically a
5 preliminary review of where I'm at.
6 MR. SEARS: You mean materials from
7 the silos or materials that we're talking about
8 including the on-site materials?
9 MR. CARR: Correct, the materials
10 from the on-site silos even, right now, based on a
11 review of their license, none of that material
12 could be received at the Dawn Mining site. It is
13 not the same material. It has many of the same
14 isotopes, it has different isotopes that are
15 present, number one, which are not currently in
16 their license to receive, and, number two, the
17 material does not meet the definition of the 11E2
18 by-product. That is not material that we're
19 dealing with. And again, I was referring to K-65,
20 that is the only material by definition that meets
21 the 11E2 by-product because it specifically came
22 from the extraction -- it's a waste generated from
23 the extraction of uranium from ore. Everything
24 else in the site, it does not meet that definition.

1 MR. SEARS: The licensing that they
2 have, does that specify that they have to take the
3 stuff from the K-65 silos so they couldn't take the
4 lesser stuff or could not reapply for a license to
5 take it?
6 MR. CARR: Again, that would be a
7 reapplication for a license from the State of
8 Washington. I don't know how many years it took
9 them to get that license, but their license is
10 specific to 11E2 by-product, number one, and there
11 is specific criteria for the maximum allowable
12 concentration that can be present in the waste to
13 be received at that site. Just like Envirocare has
14 criteria, they also have criteria. The difference
15 is that Envirocare is not limited to 11E2
16 by-product. They can receive 11E2 by-product and
17 what's called low level waste. Low level waste
18 would not only consider things like uranium and
19 uranium isotopes but also considers the other
20 things that are present at our site, the fission
21 products and transuranium that are present. That's
22 why Envirocare can receive it, because their
23 license allows for it. The Dawn Mining Company's
24 license does not include specific concentration

1 based waste acceptance criteria for these other
2 radionuclides that are present in the materials
3 that we contemplate going into the on-property
4 cell. That right now is the issue. And right now
5 a review of their license, they could not receive
6 it by either definition or by their specific
7 concentration based criteria.
8 MR. STEGNER: Tony, it is a serious
9 issue with not only Morgan but Ross and Crosby
10 Townships as well. We were approached probably
11 about the same time you guys were and we need a lot
12 more information than we're able to give you
13 tonight. We'll get something for you in writing
14 that explains it completely and why or why not we
15 don't meet their waste acceptance criteria. We'll
16 have maybe Larry Stebbons and Mac McCullough bring
17 this to the respective townships at your next
18 meeting.
19 MR. SEARS: And the task force also.
20 MR. STEGNER: Sure, we'll get it to
21 the task force and have it also at the next FRESH
22 meeting also and anyone else that is interested in
23 it. We'll make that information available at the
24 PEIC also.

1 Let's move on now and try to get back
2 to the agenda. I guess US EPA comments, Gene, are
3 you still here?
4 MR. JABLONOWSKI: Good evening, I'm
5 Gene Jablonowski from the United States
6 Environmental Protection Agency, Region 5 in
7 Chicago. I'm actually here in place of Jim Saric
8 who couldn't make it tonight.
9 Just in general, I'll try to keep
10 this as short as possible so we can all go home.
11 There's been a lot of progress lately. Decisions
12 have been made regarding the K-65 silos, the waste
13 pits, the production area, and the other waste
14 units here at Fernald. Fernald Citizens Task Force
15 has recently provided their recommendations to DOE
16 and the regulators as far as what they want to see
17 as far as the future of the Fernald site, and with
18 great help from members of the public, Fernald is
19 now on track to be cleaned up in ten years. But
20 let me remind you that while the decisions have
21 been made, the real work still lies ahead. So I
22 encourage the public to continue with their
23 participation in the Fernald cleanup program.
24 There will in the future be opportunities for

1 public participation and remedial design and
2 remedial action process as it takes place over the
3 next ten years, and hopefully your participation
4 will actually make the ten-year cleanup a reality.
5 Thanks.
6 MR. STEGNER: Thank you, Gene. Next
7 up is Ohio. Tom.
8 MR. SCHNEIDER: Hi, I'm Tom
9 Schneider with Ohio EPA. Like Gene, I think we all
10 want to get home real soon, so I just want to bring
11 up two issues that I talked about last time in
12 March, one was the dreadful state of the budget
13 back in March when we had the meeting, and I talked
14 about all the time there seemed to be that DOE and
15 the contractors spent doing budget scenarios and
16 exercises and not really paying too much attention
17 to how we can do it quicker and better, and I'm
18 glad to report now it looks like all that work that
19 we all did for the budget as far as getting
20 Congress to be aware of what was going on here and
21 the progress that we could make is paying off. So
22 through everybody's hard work we see a lot of
23 support for the ten-year plan out there both in
24 Congress and in DOE headquarters, and I think we

1 all have earned the recognition of those people for
2 this new and innovative approach to getting the
3 site cleaned up, and only through your continued
4 support, comments, and participation are we going
5 to be able to achieve that in ten years.
6 The other issue I talked about back
7 in March that wasn't looking so hot is the UNH
8 issue, and that has turned into a success story.
9 We're over 50 percent done with that. The original
10 schedule that was laid out in the directors
11 findings and orders to achieve neutralization and
12 treatment by the end of September. So I think
13 things are going really well there. So everything
14 is looking up except for tonight's issues, so
15 hopefully we can continue forward, and I don't want
16 the good things that have happened over the past
17 six months to get overshadowed by the other
18 activities this evening. There's been a lot of
19 progress made at the site and we should all be
20 aware of that path forward we're taking and keep
21 track of how we're achieving that accelerated
22 program and keep that in the back of your mind.
23 Make sure you look forward to working
24 with DOE and FERMCO and following that path.

1 There's meetings coming up in the near future to
2 try to define better how that ten years is
3 achieved, and one thing we look forward out of that
4 is a checklist of where we are in the ten-year
5 plan. I think that's going to be important for all
6 of us to keep track of where we are and how we get
7 to that completion in ten years.
8 Hopefully by the time of the next
9 meeting we have we can talk a little more about
10 that and have a workshop about that. I know Jack
11 had some comments about that. So look forward to
12 talking more about the ten-year plan in the
13 future.
14 MR. STEGNER: Thank you, Tom.
15 John, did you have anything else to
16 say tonight?
17 MR. APPLEGATE: No, I'm all done.
18 MR. STEGNER: Lisa?
19 MS. CRAWFORD: I'm emotionally
20 spent, what can I say. I want to just reiterate a
21 couple of things that Tom said from Ohio EPA. The
22 list that Johnny read to us tonight is pretty
23 amazing. I mean we've done a lot, we've
24 accomplished a lot. We've worked extremely hard on

1 the budget. If I don't have to hear the word
2 "budget" for a while, it certainly won't hurt my
3 feelings. But I think it did take a nice good
4 joint hard effort to get where we are at now.
5 I want to thank you for bringing Dr.
6 Fisher in this evening. I think even though it
7 took up a lot of time, it was something we needed
8 to do. It was important that we heard his side and
9 that he heard our side, and I think this is the
10 kind of dialogue that has to go on. I said it
11 earlier, it was deja vu of 1985, I haven't been
12 this worked up in quite a few years, and I told my
13 husband yesterday I must be getting old because I
14 don't like to do this anymore.
15 FRESH just wants you to move forward,
16 and we don't want to make it an issue, but at the
17 same time we have an agreement, we have a binding
18 agreement that we think we need to move on. If
19 this can be worked in some how, some way, fine; if
20 it can't, fine, at least we tried. I think that's
21 all we can do is try here, and we've given it our
22 very, very best shot. That's all I have to say.
23 MR. STEGNER: Thank you, Lisa.
24 If anybody else has anything they

1 want to add to the evening, the microphones are
2 open. Going once. Twice.
3 Good night, everyone. Thank you for
4 coming.
5 - - -
6 COMMUNITY MEETING CONCLUDED
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1 C E R T I F I C A T E

2 I, LOIS A. ROELL, RPR, the undersigned, a
3 notary public-court reporter, do hereby certify
4 that at the time and place stated herein, I
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10 notes.
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Spangler Reporting Services

August 21, 1995

Jeannie Foster
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In Re: Fernald

Dear Jeanne,

Please find enclosed an original and one copy of the Transcript of Proceedings taken on August 8, 1995 in the above matter.

Thank you for using Spangler Reporting Services.

Sincerely,

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