UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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PUBLIC MEETING ON YANKEE ROWE LICENSE

TERMINATION PLAN

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DOCKET NUMBER 50-029

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THURSDAY

June 24, 2004

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Mohawk Train Regional High School Auditorium

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The public meeting convened at 7:00 p.m., Gail Cariddi, moderator.

PRESENT:

JOHN HICKMAN

JOHN WRAY

GREG BABINEAU

CHRIS McKENNY

ERIC DAROIS

CLAUDIA CRAIG

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1 P-R-O-C-E-E-D-I-N-G-S

2 MODERATOR CARIDDI: It's a little after

3 7:00 and we're going to try to get going here so we

4 end up on time.

5 I'm Gail Cariddi, I'm from the city of

6 North Adams, I'm a city councilor there, and I'm on

7 the CAB, and I've been asked to moderate the meeting--

8 John Hickman, John Wray, Eric Darois.

9 First we're going to have the

10 presentations, and the first one is the regulatory

11 process from John Hickman from the Nuclear Regulatory

12 Commission.

13 MR. HICKMAN: First off, I'd like to thank

14 you all for coming tonight. My name is John Hickman,

15 and I'm the NRC -- project manager for Yankee Rowe. Tonight's

16 meeting is a public meeting to discuss their licensing

17 termination plans.

18 A few additional items I'd like to hand

19 out just outside the door of all of our presentation

20 slides as well as a sign-up sheet if you want to

21 request specific documents or a copy of the

22 transcript.

23 Tonight's meeting will be transcribed, and

24 we'll have that available for you if you want it.

25 I'm going to go through a briefing

1 presentation on the regulatory process that we go
2 through related to decommissioning of a reactor.
3 Following that John Wray will have a presentation on
4 the inspection oversight process. And then Yankee
5 will do presentation on their license termination
6 plan.
7 Next slide.
8 The first thing I'd like to address is
9 basically what is the decommissioning process. All
10 right.
11 Decommissioning as defined in the NRC's
12 regulation is the removal of a facility from service
13 and the reduction of a activity to a level that
14 permits the release of the site for other uses and
15 termination of the license.
16 Decommissioning as the NRC is concerned
17 does not include:
18 The nonradiological cleanup and demolition
19 of the site;
20 The site restoration activities, that is
21 the final restoring of the site to Greenfield or
22 whatever the licensee chooses for the final condition
23 of the site, and;
24 The spent fuel management. Spent fuel
25 management in this case being the maintenance of the

1 spent fuel in their independent spent fuel storage
2 facility, which they have on site, until it can be
3 transferred to the Department of Energy.
4 The NRC focus regulatorially is on the
5 removal of the radiological hazards. That includes:
6 The removal of the utility from service; the shutdown
7 of the facility; the reduction of radioactive
8 materials to a level that allows site release; the
9 detailed final radiological surveys. And I'll go a
10 little more into that in a second. And eventually
11 license termination.
12 The decommissioning process starts with
13 the licensee deciding they want to stop operation of
14 the facility. That could be because it reached of its
the end
15 license life or for other reasons, and they could
16 prematurely decide to shut down the reactor, which is
17 the case at Yankee.
18 When they make that determination they
19 have to send in two certifications to us. One is a
20 certification that the facility will no longer be
21 operated, and another is that the fuel has been
22 removed permanently from the reactor vessel.
23 Yankee submitted these certifications in
24 February of '92.
25 Following that certification, we amend

1 their operating license such that they have allowed to
2 possess nuclear materials but they're no longer
3 allowed to operate the reactor, and we did that
4 amendment in August of '92.
5 Subsequently the licensee will submit a
6 decommissioning plan to us that describes the activity
7 that will take place on site as they decommission the
8 reactor. This decommissioning plan will include their
9 planned activities, the schedule for those activities
10 and a site specific cost estimate. We review this
11 plan and we approved Yankee's decommissioning plan in
12 February of 1995.
13 The next step in the process for Yankee
14 would be the license termination plan, which they have
15 now submitted to us and it is currently under our
16 review, and it's the focus of tonight's meeting. And
17 eventually the license termination.
18 We do have certain limitations on
19 activities the licensee can take as part of the
20 decommissioning process.
21 They're prohibited at anytime from doing
22 any activity that would preclude the release of the
23 site for unrestricted use and they can't do anything
24 that would inhibit the release of site.
25 They can't perform any activity that would

1 result in environmental impacts not previously
2 considered, for that they would need our permission to
3 do that.
4 And they can't ~~spawn~~ perform any activity that
5 results in not having adequate funding to complete the
6 decommissioning.
7 The license termination plan and I'll just
8 do a brief description of it, the licensee will give
9 a more detailed description of it in a minute,
10 basically describes the characterization of the site:
11 That is what is its current condition;
12 Identification of any remaining
13 dismantling activities that have to take place;
14 Whatever the licensee's specific plans for
15 site remediation, that is restoration of the site when
16 completed;
17 The plans for the final radiation surveys,
18 the surveys that they would be conducting on the site
19 to ensure that the radioactive material has been
20 removed satisfactorily;
21 Descriptions of the end use of the site,
22 in particular if any restrictions were imposed. That
23 is let's say they wanted to control a certain portion
24 of the site for a longer period of time to allow
25 radiation to ~~be traded~~ decay, they would have to be specific

1 on that;

2 They need to provide an updated site

3 specific cost estimate for the remaining of the

4 decommissioning work that has to be done, and;

5 They have to provide a supplement to the

6 environmental report to describe any new information

7 since the one they submitted for operation of the

8 site.

9 The NRC activities specifically as related

10 to the license termination plan.

11 First off, we published a notice in the

12 *Federal Register* on May of 2004 that we have received

13 the submission of the plan from the licensee and it's

14 available for public comment.

15 On June of '94 we also published a notice

16 in the *Federal Register* indicating that an opportunity

17 for a hearing was available if anyone cares to request

18 it. This is standard practice during the licensing

19 action and the submission and review and approval of

20 the license termination plan is a licensing action.

21 The NRC is required by regulations to hold

22 a public meeting on the license termination plan, and

23 that's the focus of tonight's meeting.

24 Our review of the plan will typically

25 involve asking questions of the licensee because our

1 technical review may raise issues that we don't
2 believe were fully clarified in the initial plan
3 submittal. We have provided a request for additional
4 information to the licensee on June 16h. And I have
5 copies. There were some copies of the request for
6 information that I have with me, so if anyone wants to
7 get a copy they can get it from me at the end of the
8 meeting.
9 The NRC review of the license termination
10 plan will also include an environmental assessment
11 where we're doing an assessment of any environmental
12 impacts associated with the plan and the final
13 termination of the license.
14 If we find the license termination plan to
15 be acceptable, it would be approved by a license
16 amendment. In the meantime, the licensee would
17 continue to decommission the site and perform
18 radiation surveys.
19 The NRC will be and has been performing
20 confirmatory surveys of their decommissioning efforts.
21 One has already been performed related to the turbine
22 building, which they demolished sometime ago. One is
23 scheduled to be performed in another couple months for
24 other buildings on site. And we would be conducting
25 further surveys at the end of the decommissioning

1 effort along with the licensee as part of their final
2 radiation surveys.
3 If we determine that the release criteria
4 and the ~~life determination~~ license termination plan is all met and the
5 radiation surveys were all satisfactory, we would ~~them~~ then
6 terminate the license.
7 And that's basically my presentation on
8 our oversight of the license termination plan.
9 If anyone wants to contact me, the final
10 slide in my handouts includes my name, phone number
11 and email address. That NRC website at the bottom is
12 where you can locate any NRC reference documents. So
13 if there's anything you want. If you can't find what
14 you need at that website, feel free to call me or
15 email me, and I'll get you a copy. And one of the
16 sign-up sheets outside the door also includes a
17 request for documents if you want to fill that out
18 tonight.
19 Okay. And now I'd like to introduce John
20 Wray, who is the Region I inspector who will go over
21 the NRC oversight activities.
22 MR. WRAY: Thanks, John.
23 Again, if people can't hear me, I'll use
24 the microphone but usually that's not a problem.
25 I am John Wray. I'm out of the Region 1

1 office in King of Prussia, which is outside of
2 Philadelphia. And I am the lead inspector for the
3 Yankee Rowe site.
4 I've been asked to talk a little bit about
5 the inspection program on site. And if we could have
6 the first slide. I just want to make sure that we're
7 all on the same page that the objectives of the NRC
8 inspection program is: To verify the safe conduct of
9 Yankee's activities while they go through the
10 decommissioning process; verify the adequacy of
11 Yankee's controls and oversight; and to examine trends
12 in the licensee's safety performance.
13 Next slide, please.
14 Now the inspection program for
15 decommissioning reactors is detailed in Inspection
16 Manual chapter 25.61. And Inspection Manual 25.61 and
17 all the ensuing inspection procedures that are listed
18 on my handout are all available off our website,
19 www.nrc.gov.
20 I have a copy with me of 25.61 if people
21 would like to look at it after the meeting, but in
22 essence it details again the section procedures, the
23 things that we looked at during the decommissioning
24 process. And in particular, it also gets into the
25 different phases of decommissioning throughout the

1 process. And the way Yankee Rowe is situated right
2 now, it has all the fuel up on its ISFSI in dry
3 storage. It has no fuel in the spent fuel pool. And
4 it is going through some active decommissioning or
5 dismantlement work.
6 And I mentioned that because within 25.61
7 it talks about the different efforts that the
8 inspection program entails, and I'll get that in my
9 last slide.
10 But the types of things that we looked at
11 that we're required to look at are any design changes
12 to safety systems and equipment, modification, safety
13 reviews, self assessments and quality assurance
14 auditing of the programs on site, and very important
15 is the corrective action program for self-identified
16 problems and root cause analyses of those problems
17 identified by the licensee.
18 Of course, decommissioning performance and
19 status is reviewed every time I come on site. I also
20 take a look at maintenance and surveillance required
21 by the license of safety related equipment and
22 systems. Again, every time on site I take a look at
23 security and safeguards issues, how they comply with
24 orders in their security plan.
25 I take a look at the radiation protection

1 program and their control of occupational exposures to
2 personnel on site, and also their program for
3 monitoring around the site parameter.
4 I take a look at the rad waste treatment
5 systems effluent, both gaseous, liquid systems and
6 their environmental monitoring program that is still
7 intact offsite.
8 And finally, I take a look at the solid
9 rad waste management program as they ship rad waste
10 off to licensed burial facilities.
11 Okay. Next slide, please.
12 Other areas that may or may not have
13 specific inspection procedures related to it that we
14 inspect are the operation of the ISFSI now that it is
15 fully operational. There are some requirements again
16 for surveillances and temperature monitoring, things
17 of that nature that every time I'm up I take a look at
18 it.
19 Emergency preparedness is an area that,
20 again, has dwindled a little bit from the operating
21 power plant side but it's still active and important.
22 And, again, as we're all here for is the
23 site termination and final surveys.
24 The particular inspection program
25 procedure is going to mirror the license termination

1 plan. Our program for inspection will come in and
2 verify that the licensee is doing what has been
3 approved and what they committed to do in the license
4 termination plan as far as site characterization:
5 Instrumentation; quality and
6 qualifications of personnel performing the surveys;
7 the numbers of surveys; the locations of the surveys;
8 the isotopes that they're going to look for; the
9 concentrations that they say that they're going to be
10 able to see down at the low levels; and in particular
11 we're concerned about making sure that their
12 laboratory analyses are adequate to see the types and
13 the levels of contaminates that we're going to be
14 looking for.
15 So that's the idea of our inspection
16 program when it comes to final status surveys.
17 Next slide, please.
18 Just to give the audience an idea of some
19 recent inspection activities. The last inspection
20 report was issued in February. Again, these
21 inspection reports are and will be available to you on
22 line. The report 23 2003-002, again, is available on
23 line and some of the items in that report we found
24 that they have an effective working security program
25 on site. And as John Hickman said earlier, that is

1 the time frame that we had ORISE, our independent
2 laboratory come up from Oak Ridge and do a
3 confirmatory survey of the turbine building which
4 confirmed the licensee's surveys that there was no
5 radioactive material noticed and it can be demolished
6 and released for unrestricted use.
7 The inspection report also documents an
8 effective radiation control program as far as
9 exposures to on site personnel during the
10 decommissioning activities. If you recall, again, all
11 the fuel was taken out of the spent fuel pool and
12 moved to dry cask storage up on the ISFSI. And during
13 this inspection period they released the water to the
14 Deerfield River. And I took a look at all the permits
15 and regulatory requirements to make sure that the
16 release was conducted in accordance with all their
17 requirements. And that was satisfactory.
18 In addition, I took a look at the
19 monitoring and surveillance requirements of the ISFSI,
20 and that was satisfactory.
21 As of this week in my inspection this week
22 it will terminate inspection period 2004-001. And the
23 types of things that I'm looking at this time are the
24 organizational management changes, the preliminary
25 data that we have on the final status of the

1 resurveys, rad waste shipping and equipment and
2 systems, the maintenance of safety related or
3 important safety systems and pieces of equipment.
4 I expect that report to be written and
5 approved by my management and issued sometime in
6 August.
7 Next slide.
8 Again, to give you an idea of the amount
9 of inspection hours, the guidelines for a plant in
10 Rowe's configuration, again with all dry storage,
11 storage spent fuel, the guideline is about 173
12 inspection hours. That's on site. And so far this
13 fiscal year we've spent about 77. And with the
14 activities that -- we try to match our inspection time
15 here on site with the activities that are going on.
16 And certainly in the next couple of months there's
17 going to be enough activities for us to get back up
18 there two or three times.
19 Just to note that this in on site time by
20 regional inspectors, mainly myself, but when I need to
21 I call on other people. This does not include my
22 management's review time or any preparation or
23 documentation time back in the office, or time spent
24 by other officers coming up to do inspection
25 activities.

1 And that's the extent of my presentation.
2 I guess we turn it over to Yankee.
3 MR. DAROIS: Eric Darois. I'm a certified
4 health physicist by training in education, and I've
5 been acting as the license termination plan manager
6 for the development and adoption and going through the
7 approval phases for it.
8 So what I'd like to do tonight is take a
9 few minutes and walk a little bit through the LTP.
10 This is a comprehensive document.
11 Just to give you a little bit of an idea,
12 we've had a team of people that range from about ten
13 to 20, depending on what was going on, working on this
14 document and its supporting information such as
15 calculations, historical assessments and whatnot, and
16 this process took a little over a year to complete.
17 And we're in that stage, as John mentioned, of the LTP
18 review process with the NRC staff.
19 So that's a little bit about the effort
20 involved and the effort we took to get this document
21 done.
22 If we could have the next slide.
23 You may not be able to see this very well
24 on the big screen, so hopefully you all have a copy of
25 the handout.

1 This just represents in photos of the site
2 during this different phases of this process. The
3 first on the left is what the plant looked like while
4 it was operating.
5 The one to the right of that is what the
6 plant looked in March of '04, basically following the
7 turbine building demolition activities and some other
8 demolition activities on site.
9 It's current configuration from roughly
10 May was, as you can see in the lower left hand corner,
11 is where the containment vessel is beginning to be
12 taken apart. And that's for the most part, one inch
13 plate steel that has been cut into pieces and these
14 pieces have been lowered into the ground. The inner
15 crust of it you may be able to make out, is just a
16 concrete structure within that ball of steel.
17 And lastly on the lower right is what we
18 expect the site is going to look like following
19 license termination and site closure.
20 Okay. A license termination plan itself,
21 and John went over some of the information within it.
22 I'm going to go into a little bit more detail with
23 that. But really what this document represents is a
24 comprehensive plan that provides the process that
25 we're going to use to demonstrate that the site is

1 ready for unrestricted use. And, obviously, this was
2 submitted by Yankee to the Nuclear Regulatory
3 Commission for approval and then for implementation.
4 We have involved a number of organizations
5 in the process of developing this document, and this
6 is a list of those. On the upper left hand corner is
7 the Massachusetts Department of Environmental
8 Protection. Given the opportunity to review and
9 provide comments to us prior to submittal to the NRC.
10 The next one over is obviously the Nuclear
11 Regulatory Commission. On the right is the
12 Massachusetts Department of Public Health. On the
13 lower left is the Franklin Regional Council of
14 Governments. And then the EPA and then the box in the
15 lower right is the Community Advisory Board.
16 So this is effectively whose been involved
17 in the process as we went through it.
18 The criteria for cleaning up the site is
19 really two separate criteria as contained in the
20 regulations. One is a doses criteria which basically
21 says that an average person that might spend some
22 activities at the site, and I'll explain that in a
23 moment, should not exceed more than 25 millirems per
24 year. So we need to clean the site and remediate the
25 site to make that assurance, and perform the surveys

1 to make that demonstration.

2 And secondly, would be to reduce

3 radioactivity to levels that are as low as reasonably

4 achievable. So in other words, if we can within

5 reasonable cost bring it lower than that, we're

6 required to do that.

7 This next slide just gives some

8 perspective of what 25 millirem is, and it's putting

9 it in perspective to what the U.S. annual average

10 radiation dose that members of the public from a

11 variety of different sources. And this is showing us

12 the average dose in the U.S. population. It's about

13 350 millirem, with I might add quite a bit variability

14 to that depending on a number of different factors

15 both shown on the right and in the pie chart. And

16 we're obviously not going to have time to go into much

17 more of that.

18 Secondarily, we've done some surveys,

19 direct radiation surveys in the local area. And this

20 next slide shows basically what we're seeing in local

21 environments in cities and towns in the area. I'm not

22 going to read all these numbers, but basically this

23 shows that the direct gamma radiation background

24 levels vary somewhere between 59 and I believe the

25 highest is 82 millirems per year. And that's just one

1 of the components of background radiation. So 25
2 millirem really is quite low in comparison to even the
3 variability of one of those dose components. And I
4 don't want to get too technical here.
5 So we can move on. ALARA, and I already
6 kind of mentioned ALARA as low as reasonably
7 achievable is part of the regulation that says you
8 need to reduce things lower than 25 millirem if it's
9 reasonable to do so.
10 And in doing this assessment and its
11 evaluation, we consider things like the increased risk
12 to workers and the public from any remediation
13 activity. The benefit of the dose was not seen below
14 the release criteria and the economics if any further
15 reduction. So that's really the ALARA concept, and
16 there's a whole process that we go through to make
17 that determination successful.
18 The LTP contains eight sections. John
19 listed them already. This is kind of another
20 depiction of that. And I'm not going to go through
21 everyone of the sections. I'm going to go through
22 what we believe are the kind of important sections
23 here. The ones that are listed with an asterisk next
24 to the number are the ones we're going to go into in
25 a little bit more detail. But this is the standard

1 license termination plan content.

2 So what I'd like to so is go a little bit

3 into some of the additional -- some of the chapters I

4 want to elaborate on some. And the first one is

5 chapter 2 or section 2. And this contains a summary of

6 the historical site assessment. Part of the process

7 is to go through historical records of all sites and

8 to evaluate what areas of the site have been impacted

9 and how they've been impacted. So chapter 2 contains

10 a summary of that information, and we have much more

11 that we have in the files that was used to collate and

12 put this summary information together.

13 It also contains some characterization

14 data, that's where we've gone out in the plant, taken

15 samples and performed surveys and identified the

16 levels of radioactive within the site. Not as a final

17 status characterization. And this we summarize in

18 here for some of the areas on site, the buildings and

19 some of the ground water investigations that were

20 done.

21 It also contains the process of

22 classifying areas. There is a process which is

23 adopted in the LTP that results in us determining how

24 many samples we need to take in certain areas of the

25 site. And that process is governed through the

1 classification process, and that is what it contains
2 now.
3 Onto chapter 3. Chapter 3 describes at a
4 point in time what decommissioning -- what the status
5 of the plant is basically with regards to the
6 decommissioning activity. So it provides at a point in
7 time the status of the remaining plant system
8 structures and components and the different
9 considerations that we need to take, effective
10 consideration that we need to take for certain
11 systems, buildings and areas.
12 So you can see three photographs at the
13 bottom of this slide that shows and it's examples of
14 the -- in terms of status of the site.
15 Now we've submitted the LTP with these
16 decommissioning activities ongoing, and they're
17 continuing to go, so that's why I mentioned
18 particularly at a point in time.
19 The next slide discusses section 4 of the
20 LTP. This is entitled "Site Remediation Plan," and it
21 talks to different types of areas that needed to be
22 remediated, the techniques that we would be using and
23 speaks to this ALARA concept. It's ALARA
24 implementation.
25 Section 5 is the final status survey plan,

1 affectionately known as the FSS. But final status
2 survey provides us really the road map that we would
3 use, the processes that we would use to perform the
4 final status surveys on this site. It's a rigorous
5 process. It is precluded by other documents and other
6 guidance documents, but this process tells how much we
7 need to -- say scan. We have radiation scanning
8 instruments. It would prescribe the methodology by
9 which we would determine how much of certain areas and
10 buildings need to be scanned. How many surveys -- how
11 many samples you would take in specific areas. The
12 general location and describes the equipment that
13 we're going to use to perform and its detection
14 capability, as John mentioned.
15 Also describes what we put in the report
16 that we submit to the NRC or the report -- we submit
17 to the NRC for ultimately approval for license
18 termination.
19 And it also provides some quality
20 assurance description of what's going to go into the
21 final status survey process in the report.
22 I'd like to discuss a little bit more on
23 this chapter 5 issue, and discuss with you just a
24 little bit how we actually measure through final
25 status survey what is going to remain on site, how

1 much radioactivity is going to remain on site.

2 We would prepare a formal survey plan of

3 each area that we walk through on the site, each area

4 that we survey. Each one of these plans describes any

5 computer codes that we may be using to determine the

6 DCGLs, these are guideline levels that we would use as

7 a basis for our survey. And I'm going to decide the

8 DCGL concept in just a moment. But we consider all of

9 that in these documented survey plans. We describe

10 what exactly instrumentation we're going to use and

11 exactly where the samples will be taken.

12 When we're all done, we would have

13 thousands of measurements taken through the buildings

14 and site and in water. Many of these will abe analyzed

15 in laboratories; some of them here, and some offsite.

16 They have process by which we evaluate all of the data

17 very carefully, perform any additional measurements

18 that's needed or clean up. And then once they're

19 finally done, we institute controls schemes so that

20 these areas do not get recontaminated. And that's all

21 part of the process and that's all part of our

22 procedures.

23 There's also a process by which our work

24 yet to verify. We have verifications that we do

25 internally through our own organization whereby we

1 might repeat measurements and we might have our own
2 internal quality assurance group evaluating everything
3 we do and we also, as John mentioned, have NRC
4 oversight into the process and they bring on their own
5 organizations to do verifications with us.
6 And there's also participation and
7 opportunities for the state EEC and DCA to be involved
8 in verification of our processes as well.
9 Compliance with radiological criteria. In
10 section 5, the first thing I want to say here is that
11 we have a commitment in section 5 of the LTP regarding
12 ground water contamination, that we will be absent EPA
13 maximum contaminate levels or lower at the time of
14 license termination. And that's a commitment we've
15 made in the LTP.
16 Then we go onto section 6. Section 6
17 provides the framework for these things I referred to
18 earlier called the DCGLs, derived determination
19 guideline levels -- I'm sorry. derived concentration
20 guideline levels.
21 These DCGLs basically are our numeric
22 value that we would use to design surveys and to
23 demonstrate compliance. We have specific values that
24 determine for anything that's going to be left in the
25 ground, oils and whatnot, and we're basing the

1 population on a resident farmer scenario, which has a
2 little bit more information up here with you on that.
3 As far as buildings are concerned, it has
4 values that was derived for buildings and approximate
5 the buildings. They're based on a different scenario,
6 and that's the building occupancy scenario which I'll
7 describe in a moment.
8 But in either case, these DCGLs represent
9 the dose level that corresponds to -- they represent
10 concentration values that correspond to the dose
11 level of 25 millirem per year, which is the maximum
12 limits.
13 Regarding the site soils and any
14 structures that are left below grade, we've used the
15 resident farmer scenarios I mentioned. And this is a
16 scenario that involves exposure to a variety of
17 different pathways assuming that a farmer would take
18 residence on the site. And derives a lot of his own
19 food products from living at the site.
20 The calculation is done for a 1,000 year
21 increments, increments up to a 1,000 years in time to
22 ensure that we're actually evaluating the maximum year
23 of exposure.
24 So this basically shows all the different
25 pathways that we considered in this analysis.

1 The next slide shows some of the
2 assumptions. Some of these computer codes have
3 hundreds input parameters in order to allow them to
4 run accurately. They're all verified and checked and
5 have been. But the main assumptions I think for our
6 purposes here is that -- is listed here.
7 That we assume that the receptor is an
8 adult male, a female who spends 18 hours a day on the
9 site and consumes a lot of his food products from the
10 site. I'm not going to read each one of these, but
11 basically derives that much food from being a resident
12 farmer on the site.
13 The next slide just shows a little bit on
14 this ~~dating~~ building occupancy scenario. What this represents
15 is on the very left would be a room in one of these
16 buildings, or a wall in one of these rooms in one of
17 the buildings. And this is showing the material from
18 the wall, has the potential to come off the wall over
19 time and expose people and the radioactive material in
20 the wall can expose a person. There could be
21 contamination on the wall that could get on food that
22 end up being ingested. All of these are taken into
23 consideration in this model.
24 The assumptions that was used in the
25 building occupancy model basically are that we have

1 contaminated walls, we have a contaminated floor. And
2 in our particular case the ceiling of our particular
3 model is considered not contaminated because we're not
4 going to be leaving any buildings on site in that
5 impact form.
6 We assume it's an adult male or female who
7 is performing light industrial work and they're a
8 full-time employee spending about 44 hours a week on
9 the site.
10 So there's two things to be applied:
11 Resident farmer for the soils and anything left below
12 grade and then the building occupancy for any
13 remaining buildings and structures that will remain at
14 the site.
15 The last chapter or last section of LTP is
16 section 8 and it focuses on the environmental -- it's
17 a supplement to the environmental report. And it
18 focuses in on the decommissioning impact in a number
19 of different categories. Again, I'm not going to read
20 them all. You can read them as well as I. So it
21 addresses all of these different issues in section 8.
22 And that brings us, I believe, to our
23 last slide. And that is where can you get more
24 information? Information, as you already heard, is
25 available generally speaking on decommissioning at the

1 NRC website. The LTP, Yankee's LTP is available
2 through the NRC ADAMS website or on the Yankee website
3 if that's website's listed, or the Greenfield
4 Community College Library.
5 With that, that concludes my presentation.
6 Thank you.
7 MODERATOR CARIDDI: Could we get an idea
8 of how many people would like to speak; A show of
9 hands, how many people?
10 Are there any local or -- or any
11 dignitaries that would like to speak first? Local
12 library official? You want to come forward. You got
13 to come forward to this microphone, sir, so that
14 everybody can hear you and it can be recorded.
15 MR. PERLMAN: I am Bill Perlman. I am the
16 selected member of the Executive Committee of the
17 Franklin Regional Council of Governments. And I
18 represent the Council of Governments on the Citizens
19 Advisory Board.
20 I guess I've been following your process
21 now for a little over a year since the Council of
22 Governments joined the Citizens Advisory Board, and it
23 is a very complicated process.
24 I have been generally impressed with the
25 openness at this point that Yankee has shown, the

1 willingness to share all of the documentation with us
2 and invitations to many of the meetings that have been
3 held both formal and informal in running through this
4 process.
5 We have at the Council of Governments and
6 the Regional Planning Board have submitted comments to
7 Yankee and the NRC on the license termination plan and
8 many of the comments have been accepted and put into
9 the plan.
10 My major request, the major problem I
11 guess that we still have is a lack of knowledge thus
12 far as to the full extent of contamination of ground
13 water. I guess confused a little bit as to exactly is
14 in charge of what, NRC, DEP, EPA, the Department of
15 Public Health are all involved. But the primary
16 concern that I have at least at this point is the city
17 and ground water contamination. It has been
18 identified there has not yet been a full
19 characterization of it. I understand that more wells
20 are being dug and more testing is to be done.
21 My request then is to hold the
22 determination plan open until more information is
23 learned about the ground water contamination and some
24 plan is put forward to -- for remediation of the
25 problem.

1 I don't know whether you can give a go
2 ahead to part of this, but you know this -- you're
3 digging the bigger wells and the analysis is going to
4 take some time. Hopefully, not much longer than the
5 rest of the summer. But I would be uncomfortable in
6 finalizing the license termination plan until a better
7 characterization of the problem is defined and a
8 program for possible remediation is also discussed by
9 Yankee and the NRC or which ever other -- I think
10 there at levels that figure you're involvement in
11 this, and I know that there are levels that figure the
12 involvement of some of the other agencies involved.
13 But that, I think, is my primary concern.
14 Thank you.
15 MODERATOR CARIDDI: Do we have other
16 people that want to speak? We'll open it up to anyone
17 else? You have to come down to the microphone.
18 MS. MILLER: My name is Sunny Miller. I
19 work at -- in Deerfield.
20 And I'm happy to say I helped to close the
21 plant, and I'm sorry today I haven't helped much in
22 the year since in thinking about what needs to done.
23 In the year since, though, I have
24 continued to study radiation issues and I'd like to
25 refer you to an interview with Dr. Chris Busby who is

1 on some government panels in the U.K. And he draws
2 our attention to misconstrued thinking about radiation
3 health hazards, especially he says in particular that
4 the second event theory and the harm of internalized
5 radiation particles, external gamma radiation, is an
6 enormous difference.
7 And perhaps you already are aware of his--
8 and the world society in Great Britain really taking
9 a second look at presumptions made way back during the
10 Hiroshima studies when still to this day victims of
11 radiation who entered the city after the bombing have
12 not been compensated for their health damage as though
13 breathing in contaminates there's no problem, but if
14 you're there for the immediate rise, the immediate
15 gamma radiation, you know, you would be harmed.
16 So our government hasn't kept up with the
17 science. And Chris Busby explains in very simple
18 language, and he can do it in complicated terms, too,
19 but I prefer the simple language.
20 For example, if you're sitting in front of
21 a fire, yes, it changes. You know, how sparks fade
22 away, and you know it's very soothing. But if you
23 breath in a radioactive particle, whether it's defused
24 uranium, and the rest of the particle might have as a
25 many as a trillion million atoms compared to uranium

1 in the environment at a level of 2 to 4 parts per --
2 is it million or billion, something like that, you
3 know. That these man made particles are concentrated
4 giving your tissues not once, but repeatedly. And
5 they are precise.
6 And things like they -- you're sitting in
7 front of that fire and throwing a hot coal, that when
8 you look at the radioactive contaminants that are
9 measured on site, you need to be thinking about
10 especially the particles that are going to be taken
11 into the body and the ones that are breathed in being
12 much more hazardous than the ones ingested, as I
13 understand it. Because at least our digestive system
14 is really based on elimination and so there's some
15 good chance that you could eliminate those particles.
16 But in the lung, these particles are down for them
17 stay and be absorbed through the bloodstream and then
18 it radiates critical tissue.
19 And I'm particularly concerned that you're
20 modeling your standards on adults. And we all know,
21 I believe that everybody in this audience knows that
22 young children, teenagers, elders and especially fetus
23 and especially our forming egg cells are particularly
24 suspectable to radiation harm.
25 The pancake, the pink pancake in the

1 illustration of the farm is particularly -- I want to
2 say humorous, but maybe it's not funny. A pancake --
3 you know precise oval. And in fact you can anticipate
4 that in 15 years, in 100 years in 300 years excavation
5 might disrupt that mound. Children love to dig in the
6 soil. Children are acceptable to ingestible
7 particles.
8 And I accept that this not only Yankee
9 Rowe's concern, and all the ratepayer's concern that
10 all of the concerns of humans who are clicking on our
11 lights and using nuclear energy, but I'm doing what I
12 can to reduce my concern.
13 I hope that a period of partnership and
14 really consideration is given to what can be left
15 behind. And I would propose that rather than
16 returning to the site to something that looks benign,
17 it could be marked in perpetuity, if possible.
18 It's something like the -- there is this
19 fear at number three that there is a hope of a
20 radiation contamination drain and hides the
21 possibility of warning for future generations, that
22 grassy lawn.
23 Thank you.
24 PARTICIPANT: (Off microphone.)
25 MODERATOR CARIDDI: I think we're probably

1 going to respond as the questions are asked.

2 PARTICIPANT: (Off microphone).

3 MODERATOR CARIDDI: Yes, getting back to

4 the ground water issue. I think you heard Yankee Rowe

5 say that they were going to meet the NCO. They don't

6 know the NCO is -- as far as the ground water goes, I

7 believe you heard the NCO say that they've committed

8 to meeting the EPA ~~NCL~~ MCL for drinking water. I don't

9 know yet the ~~NCL~~ MCL rates for tritium in the ground

10 water, but they will be meeting or be below that?

11 PARTICIPANT: Can you tell us what the ~~NCL~~ MCL

12 is?

13 MODERATOR CARIDDI: The ~~NCL~~ MCL is the maximum

14 concentration --

15 PARTICIPANT: (Off microphone).

16 MODERATOR CARIDDI: Bear with us. It's a

17 little bit difficult passing the mic back and forth.

18 We apologize.

19 MR. DAROIS: The ~~NCL~~ MCL for tritium is 20,000

20 pico curies per liter.

21 MS. ~~KUTZ~~ KATZ: I'm Deb ~~Kutz~~ Katz of the Citizens

22 Awareness -- I have a number of concerns and

23 questions.

24 I'm very glad that Bill Perlman brought up

25 the issue of treating contamination, which is a very

1 big concern of ours because of a leak in the -- of
2 tritium into the Sherman Pond. It went, as far as I
3 know, into the Deerfield River. And at this point
4 there are three forms of tritium on site at different
5 layers on the site. As you cleared them, it's about
6 the EPA drinking water standards. One is, I think,
7 45,000 pico curies per liter at this point. I'm not
8 sure what the other is. And there are test wells. We
9 are really concerned that Yankee is coming out with
10 this licensing plan and the NRC wants to hold a
11 hearing on this issue, when all of this information
12 about this contamination is unclear yet and not
13 determined.
14 We're also concerned, although the NRC
15 doesn't deal with it, is the PCE contamination and the
16 ~~PCD~~ PCB contamination that is also part of the effluent.
17 There are also -- potential required the
18 plume may be the under fuel pool, which has not yet
19 been removed. Has the fuel pool been removed yet?
20 MR. DAROIS: No.
21 MS. ~~KUTZ~~ KATZ No. So that there is potential
22 for more things or greater extent of the plume to be
23 discovered under there. We're very concerned about
24 this.
25 And, you know, the NRC has claimed a 5

1 millirem, what is the EPA limits for the drinking
2 water that you guys have to meet. You talk about it
3 terms of the drinking water is going to be 26,000 pico
4 curies per liter for tritium, but what is the limit?
5 Yes, the NRC has the 25 millirem limit. What is the
6 EPA's drinking water standard limit?
7 MR. DAROIS: The EPA --
8 MS. ~~KUTZ:~~ KATZ No, but isn't it a lower
9 standard than the 25 millirem? Isn't it ten or 15
10 millirems for the drinking water?
11 MR. DAROIS: What is the ~~MCR~~ MCL based on?
12 MS. ~~KUTZ:~~ KATZ Yes.
13 MR. DAROIS: The ~~MCR~~ MCL is based on really an
14 old method of calculating deltas. It's no longer
15 applicable anymore, and I don't want to get into the
16 technical details. It's based on a 4 million -- from
17 1959. But if you convert that into -- it's somewhere
18 between -- and 1½ million and that 25,000.
19 MS. ~~KUTZ:~~ KATZ I wonder if you're going to be
20 able to meet that given the level of tritium that's in
21 ground water contamination at this point. That from
22 the 25 millirem limit you have. That's not
23 necessarily going to be easy to deal with.
24 I really think it would be good for this
25 community if the NRC and the ~~DET~~ DEP would come here and

1 meet together to talk about the history. Because
2 certainly -- was broken off into what you deal with,
3 which is the radiological but this plume is not just
4 radiological and our concern is how you guys are going
5 to clean it up. And you're not just cleaning up the
6 radiological and leaving it for someone else to clean
7 up the ~~PPB.~~ PCB I think you're cleaning up the ~~PPBs~~ PCBs and
8 the PCE as well.
9 So the question is who is going to -- we
10 would like a meeting where all of the agencies that
11 are involved in the cleanup are participating.
12 Because otherwise we have no sense of accountability
13 in this process about what anyone is going to do.
14 We're also concerned about the fact that
15 the fuel pool is going to come out as part of the
16 commitment in case there are leaky casks. The casks
17 that are on site right now are going to be there for
18 a long time, potentially 10, 20, 30 years. There's no
19 guarantee when Yucca Mountain is going to open, or if
20 it will. And there is the potential for leaky casks.
21 And you don't have a way of dealing with that at this
22 point.
23 So you believe that a fuel pool should
24 remain site.
25 We're also concerned about terrorism and

1 the fact that post-9/11 fuel pools and casks are
2 targets for terrorism. And we would really like to see
3 Yankee -- the casks on site, not just leave them open.
4 Because sitting out there, they might as well have a
5 sign on them that says "hit me" at this point.
6 Now I realize Yankee isn't the busiest
7 reactor to get hit right now, but it certainly is
8 vulnerable like all the active sites. And we don't
9 think that the safeguards that have been in place are
10 enough.
11 We're also concerned with transportation.
12 Yankee has been transporting low level waste both
13 radioactive but also PCBs, and you've had two
14 accidents already. One in which, you know, a canister
15 went down a ravine and broke and another traffic
16 accident which someone was killed who wound up hitting
17 into one of your trucks.
18 We are concerned that there are what,
19 2,000 -- isn't it about 2,000, gentlemen? That are
20 going to take place and you've just begun this process
21 and there have already been two accidents. So we're
22 concerned for roads in transition.
23 And then we're concerned about what's
24 going to happen when you have to move the high level
25 waste out and how we're going to be protected.

1 And I have a series of questions which I
2 want to submit to you. I submitted things to you last
3 time we had this meeting, and I never got any
4 response. So I'm hoping you'll do better this time.
5 MR. ALEXANDER: Good evening. I'm Peter
6 Alexander. I'm the Executive Director of the New
7 England Coalition.
8 I really feel like I should apologize to
9 your community. My only connection with this area is
10 Kevin Morand, who has now been promoted to our editor
11 at the -- so forgive an outsider for coming in here
12 and being a big loud mouth.
13 But the New England Coalition is the most
14 experienced and longstanding of the safe energy
15 advocates, I'll call it, in the region.
16 Fourteen years ago -- we raised issues of
17 embrittlement of the reactor vessel there with this
18 plant that ended up being key in the decision to shut
19 down the plant in the first place.
20 And in 1996 the New England Coalition
21 contributed financially for a review of the Main
22 Yankee independent safety assessment of its use and
23 issues that emerged from that review ended up shutting
24 down that plant. So we have a substantial amount of
25 experience and technical expertise behind us.

1 Several years ago NEC with ~~PAM~~ and I
2 believe other groups intervened in the first Yankee
3 Rowe license termination plan raising issues that led
4 to the licensee withdrawing the plan without penalty,
5 although it cost us $90,000 ~~per se~~ to bring those
6 issues forward to public attention.
7 So the license ~~determination~~ plan without
8 a name and without a license or a permit has been
9 going ahead anyway. So you guys have got about 90
10 percent of the job done, it looks like, maybe more
11 without a plan in place. So that's kind of a curious
12 circumstance. And now you're coming in basically
13 almost after the fact and asking for a rubber stamp,
14 it looks like, on this plan.
15 Meanwhile, we have the EPA suggesting
16 dilution of standards and we have NRC doing the best
17 it can to support licensees. Well, for example up
18 there in our area they're doing the best they can to
19 help Entergy, which is Entergy Nuclear Vermont Yankee,
20 a particular appropriate name we thought for deadly
21 skin. But the Nuclear Regulatory Commission is up
22 there doing everything it can basically to help
23 Entergy creating even more nuclear waste at an
24 accelerated rate with a 20 percent upgrade.
25 Your track record, the Nuclear Regulatory

1 Commission's track record is not really one of public
2 advocacy. It's one of industry advocacy. And if I had
3 a question, I guess -- it's how can you justify in
4 your minds and your children and to your grandchildren
5 the work that you're doing when you allow standards to
6 be relaxed and the minimum standards to basically
7 reexplain the fallout problem of the '50s bomb testing
8 as far as diluting radioactive material or proposing
9 and allowing and promoting that radioactive materials
10 should be diluted with other landfill waste and dump
11 in local landfills, and how can you justify this?
12 And my question is what are you going to
13 live with your own conscience to ensure not just that
14 the minimum standards are met, because the standards
15 keep shifting, but really doing the right thing and
16 really properly cleaning this site up and doing it the
17 right way?
18 Thank you.
19 MS. ~~CLAUDIA.~~ CRAIG Well, our regulations for
20 decommissioning were put in place in 1997, and it's
21 called the License Termination Rules. And that is the
22 regulations that sets the 25 millirem dose standard
23 for decommissioning, and that has not changed since
24 1997. And that's the standard that we use. We believe
25 that standard is protective of the public health and

1 safety. It is below international criteria of 100
2 millirems per year. So we believe that that standard
3 is protective of the public health and safety.
4 MODERATOR CARIDDI: The next speaker is
5 Sam Lovejoy.
6 MR. LOVEJOY: I just wanted to add
7 something. There is this interplay which I think has
8 gotten to the point of real confusion between NRC, EPA
9 and then the State of Massachusetts Department of
10 Public Health, 25 millirem a year, 10 millirem a year,
11 which commitment pledge is which and is it possible
12 for the NRC to share or we'll all get together and
13 have a meeting or however you want to do it, to have
14 the State of Massachusetts and the NRC come up with
15 -- I don't care what you want to call it, agreement,
16 contract, something that agrees to the lower standard.
17 Now, there's no reason why you can't do that.
18 Yankee's committed to do as low as
19 possible. The state, we live here in Massachusetts.
20 So it just seems to me an effort should be made to
21 come with a resolution not at 25, but at 10, which is
22 the Massachusetts regulations. And just simply go
23 forward with that.
24 So I just wondered whether you could
25 address that as a commitment or a notion that NRC

1 could simply do?

2 MS. ~~CLAUDIA:~~ CRAIG Well, as I said before the

3 NRC's limit is 25 millirem. The state does have the

4 option of implementing lower levels than that, and

5 that has been between Yankee Rowe and the state to

6 work to work out how Yankee Rowe is going to meet

7 those lower limits.

8 The state does get copies of all of the

9 documents that the NRC issues to Yankee Rowe, so

10 they're aware of all of our requests for additional

11 information. They will get a copy of the draft

12 environmental assessment that we write. At the end of

13 the process after we finish our review, we draft up an

14 environment assessment. The state has 30 days to

15 comment on that document in draft so that we can get

16 their input on that document.

17 So we are working with the state. They're

18 involved in telephone conversations, you know,

19 conference calls that we have. I believe John talks

20 with the state rep quite often. I know Yankee Rowe

21 talks with the state rep.

22 As far as the EPA/NRC interaction, the NRC

23 does have a memorandum of understanding or MOU with

24 the EPA. And that is a memorandum of understanding to

25 consult with the EPA when Yankee Rowe hits review

1 levels, and there's a list of them in there. And so
2 if Yankee Rowe's numbers in their license termination
3 plan hit those trigger levels, we're required to
4 consult with the EPA, let them know what Yankee Rowe
5 is doing. And then if after the clean up process if
6 Yankee Rowe's numbers are still hitting those trigger
7 numbers, we are required to consult again with the
8 EPA.
9 So, we are interacting with both the EPA
10 and the state. And I know the licensee is interacting
11 with the EPA and the state.
12 MR. LOVEJOY: I mean, I appreciate your
13 answer, but essentially what I just heard was a lot of
14 consult and talk and stuff, but there's no contract,
15 there's no agreement.
16 MS. ~~CLAUDIA:~~ CRAIG No, no. The NRC -- no. The
17 NRC's regulation is 25 millirem.
18 MR. LOVEJOY: Yes, but there's no reason
19 why the NRC couldn't enter into an agreement with the
20 state of Massachusetts to agree to a 10 --
21 MS. ~~CLAUDIA:~~ CRAIG I don't believe that the NRC
22 -- in order to do that, we would need to go through an
23 entire rulemaking process and go through the same
24 process that we did when we implemented the license
25 termination rule. And as I said earlier, we believe

1 that 25 millirem is protective of the public health
2 and safety.
3 MR. LOVEJOY: And maybe you could talk to
4 counsel about that. It's my understanding that you can
5 enter into a voluntary contract so long as -- the
6 state and the federal government could agree to an
7 agreement to go forward.
8 Anyway, maybe you can check on that.
9 MS. ~~CLAUDIA.~~ CRAIG Okay. I'll take that as a
10 comment back and talk to our counsel.
11 MR. LOVEJOY: And the second one is just
12 publicly I think you got to do something -- oh, I want
13 to thank you for, especially Mr. Wray having come up
14 with a different way to say this ISFSI. A lot of
15 people refer to it, and unfortunately Yankee as well,
16 ISFSI, which you know make it sound these casks are
17 actually -- and you seem to pronounce it differently.
18 I think thought that was really good. I just thought
19 that was good.
20 I think there's a lot of concern out there
21 about the security of the of the storage system. I
22 think it's mysterious to people. And maybe the
23 license termination plan is a place where you could
24 address it.
25 One example is on page two at the bottom

1 right you have at license termination when you got
2 this gorgeous plain site, you know -- but there's no
3 waste storage there. You know dry cask storage. So
4 I'm just -- there's a sort of illusion here of what or
5 a problem what is license termination when you add the
6 fact that you've got dry cask storage on the site?
7 Does it mean that the termination doesn't truly end
8 until the waste gone? Is there a license termination
9 plan with an amendment at the end that says
10 everything's gone but the waste. But this is just
11 opening to you, I think, to address a lot of public
12 concern, you know, terror issue is a concern, decay is
13 a concern, 20 years to the release is a concern. You
14 know, when the casks start -- maybe you should keep
15 the water pool there as a backup in case something
16 goes wrong with the dry cask storage. And that's a
17 legitimate way to address a concern. I don't know if
18 that's the way you want to address it. But there out
19 to be some way to address it, anyway.
20 I think you should take the opportunity of
21 the license termination plan to address the security
22 long term and short term and on an emergency basis to
23 cask storage.
24 I wonder whether you could address the
25 question of whether there's enough money in the trust

1 fund for a decommissioning to take care of all this,
2 number one. And number two whether the dry cask
3 storage system is part of the decommissioning trust
4 fund.
5 MR. HICKMAN: Let me answer one aspect of
6 that. As far as license termination, right now they're
7 licensed to store that waste in their independent
8 spent fuel pool storage installation is under their
9 Part 50 license. So as long as that fuel there, they
10 cannot terminate the license for that portion of the
11 site.
12 So when the license is terminated, that
13 fuel has to be gone. So that's why the picture showed
14 the spent fuel line.
15 MR. LOVEJOY: No, I'm just looking it up
16 because it's sort of -- it seems as if the license
17 termination plan maybe is or is not addressing the dry
18 cask storage.
19 MR. HICKMAN: The plan addresses the
20 criteria by which the license should be allowed to
21 terminate. But, in fact, they can't do it until --
22 while that spent fuel is still stored on site.
23 MS. ~~CLAUDIA:~~ CRAIG Do you want to address the
24 cleansing issue.
25 PARTICIPANT: (Off microphone) Is that

1 better?

2 What I was saying there will be money in

3 the decommissioning trust funds to cover the safe

4 operation and the security and the maintenance of the

5 dry cask storage facility. Thus, the current estimate

6 which, if I remember the number correctly, assumes

7 that the fuel will be gone by the year 2020. If that

8 does not end up being the case, that would be the

9 basis to reevaluate the cost estimate to get the

10 appropriate amount of money to maintain the plant.

11 Does that answer your question, Sam?

12 MR. LOVEJOY: Yes. And my final -- I just

13 wanted to make a comment and maybe you could sort of

14 address it in the future.

15 And that's sort of loose language, and

16 page 18, I think it is. Yes. When you're doing an

17 analysis of the consumption of food by the farmer

18 woman. You used the word "about," and that sort of

19 plays into a cynicism that's out there, you know,

20 about as low as reasonably achievable; what's

21 reasonable as achievable, what's economic, what's not,

22 what's the balance. And I think if there's a place

23 where cynicism breaks out the most, it's when sort of

24 slippery words are used or words that aren't

25 completely specific that then can be interpreted in a

1 lot of different ways.

2 So I think ALARA is one of those ones

3 where people say, oh, yes, what's reasonable. I mean,

4 you know, so I think there's got to be a way to

5 address those issues so that the public feels that,

6 you know, obviously reasonable is reasonable. But is

7 it reasonable because it's a cheaper or is it

8 reasonable because it's expensive, or is it reasonable

9 because there's a high health impact. I mean, you

10 know, so I think as person using sort of loose words,

11 I would strongly urge you to try be as absolutely

12 specific as possible -- particularly with the public.

13 Thank you.

14 MODERATOR CARIDDI: Ersha Williams?

15 MR. WILLIAMS: My sense of this is a lot

16 of people who deal -- as being mostly removed that

17 the risk of danger is over. But my sense is that the

18 nuclear waste that will be sitting there indefinitely

19 is still a hazard.

20 Jeb Cash has a study that says that half

21 of New England would be uninhabitable if the nuclear

22 waste at Vermont Yankee was ever to catch fire. I

23 don't know how much waste there is at Yankee Rowe.

24 But I have two questions with regard to

25 the dry cask storage which, as I understand it, is in

1 lieu of new technology, and it's still kind of in its
2 early stages.
3 The first one is the previous speaker
4 asked if you would consider keeping the water pool
5 there in case there was a problem with the spent fuel
6 casks, so you could put it back in the water to cool
7 it down. And do you have an answer to that question,
8 first?
9 MR. BABINEAU: The answer to that is at
10 this point in time the plant is to remove the spent
11 fuel pool.
12 MR. WILLIAMS: Well, why not leave it
13 there in case there is a problem with the ground cask
14 storage?
15 MR. BABINEAU: Because the time frame, and
16 this is not my area of expertise. I'm kind of here
17 representing -- but from my association with the plant
18 I do know that the time frames involved with
19 recovering from issues that happen to those casks
20 that's been the way they're designed allow time to put
21 in place recovery actions and to bring to the site
22 suitable vessels that could transfer the fuel canister
23 that's inside those concrete casks -- for example.
24 MR. WILLIAMS: I'm sorry, I didn't hear
25 your name?

1 MR. BABINEAU: My name is Greg Babineau.

2 MR. WILLIAMS: And you work for the NRC?

3 MR. BABINEAU: No, I work at Yankee. AT

4 Yankee on site closure implementation.

5 MR. WILLIAMS: Okay. The second question

6 was something else that Katz mentioned, which was the

7 threat of terrorists. And I was in a meeting where I

8 heard the President of Entergy at Vermont Yankee say

9 that the dry casks are -- his words I think were

10 impermeable for resistent -- essentially resistent to

11 all forms of man made and natural assaults.

12 And then I went to a website that belonged

13 to a member of Congress. I forget -- she's from

14 Nevada I think. And on that website there's a video

15 clip of one of these dry casks at the Aberdeen Proving

16 Grounds, Army proving grounds, and a TOE missile,

17 which is the kind of missile which Al Qaeda used to

18 try to shoot down an Israeli jetliner a few years ago.

19 And there's a lot of TOE missiles out there. It went

20 directly through, in one side and out the other side,

21 of the dry cask.

22 And that leads me to think that they're

23 not resistent.

24 And also, anybody who has ever been up to

25 Yankee Rowe, you can stand right across the river from

1 -- you can extremely close and you can make all kinds
2 of detail from the public road.
3 It seems that if there were terrorists who
4 had a TOE missile, which apparently are widely
5 available, and if they wanted to hit the dry cask it
6 would be quite vulnerable. I'm wondering what your
7 reaction is to that possibility?
8 MR. HICKMAN: Well, first off, we have to
9 start right from the beginning that the point of this
10 meeting was not to discuss the dry cask storage and we
11 didn't bring the experts here we needed. For a
12 meeting of that, we would need the personnel from the
13 ~~special~~ spent fuel project office and our security office staff
14 at headquarters. So we don't really have the people
15 that can give you all the answers you need on those
16 issues, because of the point of this meeting was the
17 license termination plan.
18 The one thing I can address is after 9/11
19 there were additional security measures imposed on all
20 licensees, both at operating plants, decommissioning
21 sites and at -- to enhance the protection of the site.
22 And, obviously, this security is reasonable. We can't
23 go into the specifics of what those measures were.
24 I also know that our security offices
25 continue to do vulnerability assessments of dry cask

1 storage to determine if any further actions are
2 required. But since we don't have the people from
3 that office here, I can't tell you the current
4 progress of that assessment or when it will be
5 completed and what, if any, additional measures may be
6 imposed.
7 MODERATOR CARIDDI: There are a few other
8 names on this list. If you want to come forward if
9 anybody else is going to speak. Do you want to speak
10 now?
11 If there's anyone else, if you could just
12 sort of come up a little.
13 MS. CORNER: I'm Betsy Corner, and I lived
14 in the area long enough to have been through a few of
15 these.
16 And I just want to say to the workers at
17 Yankee Rowe, I do appreciate their work because I know
18 that they have had managed the plant very well. It's
19 just the understanding I have, unlike what I
20 understand about the -- just a simple question which
21 may have been answered, but this pink pancake in the
22 part of your picture. Just what level of
23 radioactivity is there in that material and what are
24 you responsible for in following that radioactivity to
25 leeching, particularly with Deerfield River, which

1 I've stayed away from for a few years pretty years,
2 and yet it's a highly popular place for most of our
3 children, you know -- for our community, as you well
4 understand.
5 MR. DAROIS: Let me try to address this.
6 First of all, this imagine is a gross over
7 simplification of the calculations that go into this.
8 The calculations themselves are performed using a
9 computer developed at Argonne National Laboratories.
10 It's called RESRAD.
11 And the depiction here is intended to
12 illustrate for this pancake, as you call it, it's
13 contaminated soil, but the rain water does account --
14 or the rain events do account -- is accounted for in
15 the model. And that these rain events that happen,
16 annual rainfall in this computer model does account
17 for leeching radioactivity into the ground water.
18 In this particular picture, and the model
19 basically assumes that somebody has put a well into
20 that contaminated water. Uses that water as a source
21 of irrigation and drinking and livestock watering.
22 And that the individual derives all of his water from
23 this, and harvests the food and all that comes from
24 the site. So the 25 millirem assures that all of
25 those individual task areas have been accounted for

1 through this calculation.

2 MS. CORNER: Well, I'd ask, is this

3 material stuff that comes from the plant over the

4 years? Is it stuff that's --

5 MR. DAROIS: Yes. It's low level

6 radioactivity that in the soil.

7 MS. CORNER: Not the cobalt which has a 50

8 year -- past life. I mean, I'm not an expert,

9 obviously, if I can't spill this out. But, you know,

10 when I read about the 50 year business. You know, is

11 that in -- or any quantity there and leeching into --

12 MR. DAROIS: Well, the quantities that

13 would be allowed to be present would be such that

14 nobody would exceed 25 -- this resident farmer

15 wouldn't exceed 25 millirem in any maximinally exposed

16 year. From all the different pathways, from all the

17 different radionuclides that could possibly be

18 present. And that's what the LTP lays out is the

19 process by which we combine all of those things

20 together to make that determination.

21 So if there are soils that exceed that

22 level, they'll be removed as part of the process.

23 MS. CORNER: Okay. Do we have an

24 understanding of what is -- in there that has leeched

25 already or is in the process of leeching into what I

1 understand is Sherman Pond and therefore in the
2 Deerfield River?
3 MR. DAROIS: There have been a number of--
4 hundreds, I guess I'm safe to say, hundreds of soil
5 samples that have been taken at the site, maybe
6 thousands of soil samples taken the site to determine
7 what we believe is present in the areas that we could
8 gain access to.
9 Those samples are information that we use
10 to further design how we're going to do the final
11 survey. So, yes, we have information on the presence
12 of radioactivity in some of the sites soils, and that
13 is contained or summarized in chapter 2 of the LTP and
14 then also provided in much more detail in a document
15 called the Historical Site Assessment.
16 MS. CORNER: I guess my hope is simply, as
17 Mr. Lovejoy said it, just to be clearly -- you know,
18 for of those who aren't scientists, that we could
19 understand we at least protect ourselves and our
20 children from that.
21 Thank you.
22 MR. BABINEAU: I wanted to add a little
23 bit to what Eric said.
24 I mean, we all care about the environment
25 as well. I've lived in the area, worked at Rowe for

1 28 years.

2 PARTICIPANT: (off microphone.)

3 MR. BABINEAU: I'm very sorry about that

4 and that we'll try better. Is that better?

5 PARTICIPANT: Yes.

6 MR. BABINEAU: Sorry.

7 What I wanted to say, is I mean we share

8 your concerns with the environment, with the river.

9 And as what Eric says, your concerns in what regular

10 activity may have migrated from the site to the river,

11 to the environment. In addition to the measurements

12 we're doing right now insofar as the license

13 termination plan and the final survey, in effect since

14 1959 when the plant was first -- when construction

15 began, there's been an environmental monitoring

16 program that's been ongoing that include the wide

17 variety of samples on the rivers, on all kinds of

18 offsite air samples, vegetables. River water in

19 particular at a variety of locations, above and below

20 the plant as well as right at the effluent point. And

21 that's been in place and been monitored through an

22 entire operation of the facility right up to the

23 present day and it will continue to be.

24 And if you look at the annual reports that

25 are generated each year that go to the NRC, but they

1 are publicly available, there has been from releases
2 essentially no ~~impasse~~ impact from the radioactivity on the
3 site to the environment, which no measurable
4 radioactive in the river from the site right now. And
5 there's significant natural radioactivity anywhere in
6 the river, any river, any stream, anywhere.
7 Radioactivity from the plant is not
8 measurable in the river at this point in time.
9 I don't know if that helps.
10 MS. CORNER: You have a big responsible
11 and I --
12 MR. BABINEAU: Well, I was just trying to
13 put a perspective on your question.
14 MS. CORNER: Thank you.
15 MODERATOR CARIDDI: Janis Carr?
16 MS. CARR: I have no scientific background
17 either and I first became involved in this when Yankee
18 Rowe was talking waste for -- and since then we've
19 also had a meeting about debris that's inside the RCA
20 area, possibly coming in -- so I got into that and
21 researched low level radioactive waste. And have had
22 seen that the NRC wants to relax the standards. And
23 to, if I can get this correct, to on one-third of the
24 low level radioactive waste it is now to be classified
25 as below regulatory concern or BRC. And I was

1 wondering what is going to happen to all of the
2 rubble, concrete and the debris that's now at Yankee.
3 That's one question.
4 PARTICIPANT: (Off microphone).
5 MS. CARR: What's going to happen to the
6 debris that's now at Yankee? Is it going to be
7 chucked out, is it going to be used there as landfill?
8 And another question as far as the state
9 and the EPA and the NRC, what happens next? Does the
10 state take samples? Does the NRC take samples? Do you
11 share data or does everyone do independent testing?
12 And my third question is where do we go
13 from here? This is, I guess, an information NRC
14 meeting, but when do we meet with everyone? And what
15 is the step in that LTP process, what are the steps
16 taken next? And what is the public forum?
17 Thank you.
18 MR. BABINEAU: Let me answer the first
19 question, the one about the debris and the rubble.
20 There have been discussions, as you know,
21 with possible -- helping out the towns -- and Howard
22 with their landfills. If we were to do that, we would
23 not do that any debris that contained plant related
24 radioactivity. That's --
25 PARTICIPANT: The question of my concern

1 that -- I was told that the debris was from inside the
2 RCA and there was more other RCA debris left.
3 MR. BABINEAU: That's not correct.
4 And at this point in time I don't know
5 that any -- there has been no determination of what
6 may or may not to that landfill. But if it were to
7 go, it would go as debris or soil, whatever it might
8 be. There is no detectable plant radiated
9 radioactivity.
10 MS. CARR: By the NRC standards or by
11 state standards?
12 MR. BABINEAU: By state and NRC standards.
13 Just plain no detectable radioactivity.
14 And the second part of your question on
15 where's the concrete and debris going. A certain
16 volume of it is going offsite as -- and it's being
17 transported off site. And there's certain volumes
18 that are going to stay on site and be used as
19 backfilled. And anything that remains on site is to
20 meet regulatory requirements for it to stay. That's
21 kind of the purpose the survey programs that we have
22 in place.
23 Does that answer your question? That
24 question.
25 MS. CARR: Yes. (Off microphone).

1 MR. BABINEAU: I guess I would defer to
2 John Hickman on the regulatory action.
3 MR. McKENNEY: This is Chris McKenny with
4 the Nuclear Regulatory Commission.
5 And -- well, I think what you're
6 addressing is the fact that the EPA has put an
7 advanced notice for possible rulemaking on the
8 possible use for -- levels, radioactive waste going to
9 -- hazardous landfills.
10 NRC has not taken any actions to do a
11 rulemaking to change any waste classifications in its
12 system right now. We do that sometimes on a case-by-
13 case basis with licensees and with the landfill
14 operators when there's been a decision made that they
15 can take that.
16 Some landfills do uranium and radium
17 contaminated waste. But we haven't asked yet this
18 site at all.
19 MS. CARR: I read that Massachusetts is
20 one of 16 states that's considering low level
21 radioactive landfill.
22 MR. McKENNEY: I'm not aware of that.
23 MS. CARR: In the hierarchy who has the
24 final say? The EPA, the NRC, do you all work together
25 or --

1 MR. McKENNEY: Well, in this area,
2 especially when we're talking about the use of
3 landfills, that is -- it has to be a coordinated
4 effort. Because EPA has ultimate authority of what
5 goes into their landfills. We have authority over
6 certain types of radioactive waste. The state has the
7 oversight over the landfills that are in their states.
8 So it's --
9 MS. CARR: Does the state supersede
10 federal? So if our state standards are higher, does
11 it supersede the NRC standards?
12 MR. McKENNEY: If their standards lower,
13 yes. If the standards meaning you'll allow it.
14 Because generally because the landfill operators are
15 going to have to meet both the state and the federal,
16 so they'll be forced to meet both of them, whichever
17 is lower.
18 MS. CARR: And will there be a joint
19 meeting for the public with the state and the NRC?
20 MR. McKENNEY: I'm not a party to that.
21 MS. ~~CLAUDIA.~~ CRAIG I think we'll either go back
22 and discuss that with our management and, as I said
23 earlier, we are communicating with the state, not
24 necessarily in a public forum like this, but if we do
25 have a meeting, a public meeting, we have meeting

1 summaries that are published on our webpage, etcetera.
2 So you can read if you're not going to come to
3 Washington to sit down and meet with the state and
4 NRC. You can read about what happened at the meeting.
5 You can get copies of those, the slides etcetera.
6 We'll have to take back the suggestion
7 that the state EPA and the NRC get together and meet.
8 MS. CARR: Or maybe the state meet with
9 the concerned citizens also.
10 MS. ~~CLAUDIA:~~ CRAIG Okay. I can't speak for the
11 state.
12 MS. CARR: Right.
13 MS. ~~CLAUDIA:~~ CRAIG But I believe there are some
14 representatives of the ~~BET~~ DEP here, so they've heard your
15 comment as well.
16 MS. CARR: Thank you.
17 MS. ~~CLAUDIA:~~ CRAIG John will address the issue
18 of sort of what's next. He covered it a little bit in
19 his process slides, but he can go into it more.
20 MR. HICKMAN: Yes. So you want to know
21 where we go from here as the LTP is concerned, we're
22 going to continue our technical review of the
23 document. We've asked questions and we're still
24 waiting for their response on the questions.
25 Theoretically there could be another round of

1 questions. And then assuming we found it acceptable
2 for meeting our 25 millirem standard, we would approve
3 the LTP by license amendment.
4 Now the LTP, the document itself, simply
5 describes the standards that they would have to meet
6 in terms of their radiation measurements to be
7 acceptable for license termination. We still have to
8 finish cleaning up the site. They still have to those
9 measurements. We would do confirmatory measurements
10 and a lot of other processes would have to take place
11 because we would actually terminate the license, which
12 would also not happen until after the fuel has been
13 removed. So that's at least probably 20 years down
14 the line.
15 PARTICIPANT: Can we quote you on that?
16 MR. HICKMAN: I can't speak for --
DOE
17 MODERATOR CARIDDI: Susan Callahan is the
18 next speaker.
19 MS. CALLAHAN: Hi. I'm Susan Callahan and
20 I'm essentially a concerned citizen of this community.
21 And I have a very simple question.
22 I would like to know if any of you would
23 buy this piece of land, drink its water, eat that cow,
24 ingest those vegetables to include your children and
25 raise them? Would any of you buy this piece of land?

1 PARTICIPANT: (Off microphone).

2 MS. CALLAHAN: Would anyone buy this piece

3 of land? I wish you a long life.

4 MODERATOR CARIDDI: Next is Kate Harris.

5 MS. HARRIS: I was curious why we don't

6 know the full contamination levels of tritium in the

7 ground water and when you will know those levels and

8 what will be done to clean up and what the time frame

9 is for cleaning that up?

10 MR. DAROIS: We began looking more at the

11 ground water situation about a year ago. We took a

12 look at the monitoring that had been done to date. We

13 determined that we needed to install more ground water

14 monitoring wells to get a better understanding of the

15 distribution of contaminates in the aquifer.

16 So last summer through October or November

17 we had a campaign where we installed ground water

18 monitoring wells at the site. Installed 17 or 20 on

19 the locations of the site.

20 It's a long of process to install

21 monitoring wells to do it correctly.

22 We then entered a campaign of sampling

23 those wells on a quarterly basis. Those results came

24 back, told us we needed to install more wells and

25 we're starting to do that this week, as a matter of

1 fact. We've got another campaign this summer to
2 install more wells. But this is an investigation that
3 is a certain degree -- you install wells, you learn
4 something about the subsurface environment, you get
5 sample data, you learn more and you sit back, you
6 evaluate the data that you have and you determine if
7 you know enough.
8 MS. HARRIS: And are you seeking to put in
9 more sampling wells just because you did find levels
10 that you weren't expecting to find?
11 MR. DAROIS: In part. But the other part
12 was we wanted to fully bound the extent of the total.
13 And we looked at the location of the wells that we had
14 with the data that we had and we said we're not sure
15 how big, how wide, how deep so we need more to fully
16 understand the distribution of all of it. And that's
17 what this investigation continues to do.
18 How many more wells will we have to put in
19 to make the final determination? We don't know. It's
20 an investigation. We put in some more this summer. We
21 take a look at that information. That may lead to
22 more, that more lead to no more. We may have enough
23 information at that point.
24 So it's just -- and the important thing is
25 it's an ongoing investigation. Where it ends we don't

1 know today.

2 MS. HARRIS: Well, the more important part

3 of this is how will it be cleaned up? I mean, is

4 there a precedent where this has happened at another

5 site and they've been successful in cleaning it up.

6 And something I didn't think to ask, which

7 is this sounds to me like contamination beyond

8 standard operating procedures. So I'm wondering where

9 it's generating from or if you even know that. And if

10 ended, is the contamination caused from the reactor

11 that's now not operating or is it coming from some

12 unknown location?

13 MR. DAROIS: We believe we've identified

14 the general location where it had come from. We don't

15 believe -- there's virtually no water left at the site

16 anymore.

17 MS. HARRIS: But there's a fuel pool?

18 MR. DAROIS: It was the fuel pool/high

19 exchange complex. We haven't identified the exact

20 location in that complex area. So there's a couple of

21 different historical events that have occurred and

22 conditions that we believe it would have come from.

23 But when we're done with this investigation, we'll

24 know the answer to that more definitively. Today we

25 don't. But we're getting closer to identifying its

1 ultimate source and cost.

2 PARTICIPANT: So why don't you release the

3 information that you have now?

4 MR. DAROIS: Well, we've released all the

5 information that we have in the LTP at that particular

6 time. We continue to generate information on a

7 quarterly basis that just operates all of that. Some

8 of the maps that are in the back of the room represent

9 that.

10 PARTICIPANT: (Off microphone).

11 MR. DAROIS: Let me address that. Let me

12 address that issue.

13 There's two parts to this.

14 PARTICIPANT: Can you please state the

15 issue because we can't hear that.

16 MR. DAROIS: Yes. The question was how

17 are we going to clean up the ground water. And

18 there's really two parts to this.

19 First of all, as I mentioned earlier, we

20 made a commitment in the license termination plan that

21 if the ground water concentrations at the time of

22 license termination meet the EPA's ~~MTLs,~~ MCLs there would

23 be no need to clean it up. So we don't even know at

24 this point whether we're going to reach that point and

25 if so, when. However, our investigation will give us

1 the information. The more we learn about the aquifer,
2 the distribution, the conductivity between the water
3 sources, subsurface water sources the more we're going
4 to be able to depend on the most appropriate way to
5 clean it up if we even need to.
6 So we're continuing to study the aquifer.
7 We're continuing to study the distribution. And part
8 of our answer will come out of these investigations.
9 But today we don't have that answer.
10 MODERATOR CARIDDI: I don't have any other
11 new names on the list. Is there anyone else?
12 All right, Jill.
13 MS. ELDRIDGE: I came up an hour and a
14 half from Huntington, Mass because I'm fairly
15 convinced that when these kind of places have
16 problems, it effects a large area. And so I'm an hour
17 and a half away in Huntington.
18 I have a few questions and then I wrote a
19 poem this morning.
20 How far do each of you live from a nuclear
21 power plant? You don't have to answer any of these.
22 This is just for you to think.
23 Who hires you? Is the U.S. Government in
24 the management that you mentioned above you? Who is
25 the outside non -- I mean, non-government objective

1 group who checked all your procedures and data and
2 gives the country and the people like us an outside
3 objective report? Who is that, non-government
4 objective outside of your hierarchy?
5 And who also gives their opinion as to the
6 absolute approval for this site termination?
7 Who also determines "reasonably
8 achievable," like the man stated that was very vague?
9 And I'm sorry, I only took science in high
10 school and not in college, but I would say that this
11 whole document is aimed at about 9th grade. And I'm
12 very sad about this. So, I'm wondering who put this
13 together.
14 The map with the sites where you measured
15 the radiation, when was this data collected?
16 These are some things I learned in science
17 in 9th grade. How to be a careful scientist.
18 How long was the plant in operation within
19 this area where you took these measurements on this
20 map? What's nearest to these measurement since? How
21 long was the plant in operation when these measurement
22 data were collected?
23 How far from the plant where these sites?
24 In other words, were the totals on all these sites on
25 the map and somewhat effected by this plant and how

1 long it had been operation? You didn't say anything
2 about that.
3 So for an example for, you know, to be in
4 a more methodology procedure for your base data, did
5 you collect at sites, say, three times as far from a
6 nuclear power plant as all these sites were on your
7 map to see what kind of level they have? I mean, I
8 can't believe that you put this out to the public.
9 I'm sorry. But I mean, I only took science in high
10 school, but -- okay. So that's my questions on that.
11 Oh, no. Last question. After you form your
12 hypothesis, plan your procedures, collect your data
13 and draw you conclusions and design the clean up, who
14 gets the final approval of any and all aspects of
15 nuclear power from start to finish, if it ever is
16 finished on nuclear power situations? Who gets the
17 final approval? NRC, nuclear power plant, state and
18 federal government or the people who live here?
19 And last question about this thing, does
20 termination mean that you and the plant owners aren't
21 responsible anymore after that date?
22 And this is for you to think for the next
23 few years of your life. Why do we have nuclear power
24 plants?
25 This is on a bumper sticker that I saw

1 this morning in North Hampton. A bumper that said
2 "Land of the free, home of the brave" with a profile
3 of the Statue of Liberty on the bumper sticker. And
4 it inspired me to write this for tonight.
5 This is our home. We want our children to
6 be safe. A nuclear power plant is toxic waste dump.
7 A nuclear power plant doesn't care if it's stealing my
8 health. A nuclear power plant doesn't care if it is
9 stealing my children's health. A nuclear power plant
10 doesn't care of it trespassing on my community. A
11 nuclear power plant doesn't care if it is killing life
12 on earth. A nuclear power plant is a toxic waste
13 dump. We don't want it in our neighborhood. We don't
14 want it in our state. We don't want it in our country.
15 And we don't want it on Earth. You must stop your
16 games about playing God. This is the land of the
17 brave and we want to be free again.
18 From the Bible, "As you sow, so shall you
19 reap."
20 We do not choose to allow you any longer
21 to be stealing life from us for profits. We are in
22 the home of the brave and we choose to be free now. We
23 are warning that any harm that you put out will come
24 back to you. We choose not to be part of your game of
25 destruction. Your game is finished and we no longer

1 play your game. This is the land of the free and the
2 home of the brave. We speak for the sake of our
3 children and yours.
4 MODERATOR CARIDDI: Okay. The last name
5 that I have here is Phyliss Rodin.
6 MS. RODIN: Can you hear me back there?
7 I really didn't come here to speak. And I
8 really didn't come here to speak to you people. I
9 came to hear what you had to say.
10 I'm 90 years old. You have condemned the
11 future generation that I worked to bring up to live
12 under a nuclear cloud. You know what it's all about.
13 You don't have to have all this record, all of this
14 piggly nonsense about whether this doesn't work or
15 that doesn't work, whether an OET drum can be moved
16 from one place to another in this.
17 I lived in Wisconsin. We lived on a lake.
18 We couldn't eat any fish out of there. That was
19 because you were dumping -- we were dumping your waste
20 there.
21 Now, you're all nice people. We're all in
22 the same side. A problem to be a problem has to
23 contain a lie. If it wasn't a lie, it would be solved.
24 And why don't we get together and solve it. And the
25 problem that has to be solved is how in the world are

1 we going to take the mess that we have created because
2 our lack of action earlier than this has made it
3 possible for those plants to continue to exist.
4 I don't know. Don't they have children?
5 Don't they see that they are condemning the next
6 generation to the diseases that are forming at this
7 time?
8 A little bit about me. I've spent a year
9 in Hiroshima in the 22nd year after the war, after the
10 bomb was dropped erasing the psychosomatic effects of
11 radiation burns. And believe me, it wasn't nice. They
12 were going in there because the military was sending
13 out planes to Vietnam from the island where the
14 kamikaze pilots had trained. This is all,you know, in
15 real sense of friendship to our friendship with Japan.
16 When are we going to grow up? How are we
17 going to predict the next generation that has to pay
18 for this thing? Those kids, I see them.
19 There are two things that happened today.
20 I was playing with a child who is two years old. That
21 child has to go into the mess that we left. What do
22 we do about that? How do we clean it up? That's
23 what we should be talking about.
24 And the other thing is I sat in the
25 northwest wind in front of my house waiting for the

1 car that was going to take me here? Do you mean that
2 means? That means how much did they dump on us when
3 they were here? They dumped 4.5 percent of their
4 emissions, and I knew it because I saw exactly the
5 same clouds across the sky when I came to the meeting
6 that we were having that showed the emissions were
7 coming out, it's a pink cloud and it's a gray cloud.
8 So what I was doing any day and you can see it all
9 around here.
10 When are we going to grow up? We've got
11 to stop it. We've got to get together and work it out
12 and not talk about this little bit of tin can there
13 and that bit of tin can here and that person who is
14 collecting millions of dollars on selling it all over
15 the world. We're in trouble, real trouble.
16 Arnold -- he hated my guts. I argued with
17 him for days and he insisted that he was right, we're
18 talking way back in 1974 when the conferences took
19 place in Colorado. Do you remember them? I've been
20 to all of these things. I'm a member of the Institute
21 of Security and Cooperation in Outer Space. I helped
22 to form it.
23 I spent a year on the road from Los
24 Angeles to Washington, D.C. protesting, stopping at
25 every single plant, watching all of these plants with

1 all of their water pouring into the rivers. We're in
2 trouble. Real trouble.
3 And if you can look yourself in the mirror
4 when you go home at night and say what in the world
5 can we do to resolve the fact that we've kicked over
6 the bucket, I don't know how you can live with
7 yourself.
8 I know one thing. At this point in my
9 life I'm going to keep going and I'm going to come to
10 all of these meetings and I'm going to say the same
11 thing. It is not a mechanical issue. It's a moral
12 issue.
13 MODERATOR CARIDDI: Art Swenger is next.
14 MR. SWENGER: Hello. I just have a
15 question and a follow up if possible.
16 On your chart number 5, page 5 it says
17 that the dose to a person on the site has to be less
18 than 25 millirem per year, that's the level that you
19 were talking about before. Is that above background
20 radiation?
21 MR. DAROIS: Yes, it is.
22 MR. SWENGER: So do you know what the
23 background radiation was at the site of the plant
24 prior to the plant being there? It's not on the map
25 on whose following it.

1 MR. DAROIS: The map that's on the page
2 shows direct gamma radiation measurements. The
3 measurements at the site today are within that range,
4 certainly.
5 We have measurements from when the plant
6 -- prior to when the plant was operating. I don't
7 know them off the top of my head. I don't know if you
8 know them, Greg? No.
9 But we do have measurements from the
10 direct gamma radiations from when the plant -- before
11 the plant was operating.
12 This is a dose level, 25 millirem per year
13 that's difficult to measure with an instrument like
14 this. So for that reason we take samples. We use
15 these computer models to model the site. And we
16 interpret those sample results because we get dose
17 from all kinds of different pathways, not just direct
18 gamma radiation.
19 I don't know quite how to explain it.
20 MR. SWENGER: So I guess the only other
21 question I have is whether or not there is -- there
22 purely might be studies about an increase in
23 background radiation by 40 percent, 30 percent,
24 whatever that would mean. I mean at Rowe School you
25 get 64 millirems per year. If you add 25 to that, it's

1 more than if you -- or less then if you go to the
2 Whitcomb Summit where there's 82 and you add 25.
3 I guess the question is if there is a 24
4 millirem increase in the background radiation per year
5 during the lifetime of a human being, are there health
6 effects or any studies about health effects?
7 MR. DAROIS: I guess the best way to
8 answer the question is if the NRC's established a 25
9 millirem as protective of public health and safety,
10 recognizing just to clarify something on the slides
11 you're referring to, it is one of the dose components
12 that we receive radiation exposure from. And, in
13 fact, the total dose in the U.S. population is about
14 350 millirem in a year. And that's the total dose we
15 compare against. And there's lots of variability in
16 that as well.
17 MR. SWENGER: So then the 25 would be like
18 an 8 percent or a 7 or 8 percent increase in that
19 annually?
20 MR. DAROIS: Or probably the U.S. average,
21 correct.
22 MR. SWENGER: Right. Thank you.
23 PARTICIPANT: There should also be a 7 to
24 8 percent increase in cancer rate, is that right?
25 MR. DAROIS: It's not linear with millirem

1 in that regard. There are cancer risk factors that
2 have formed the basis of the 25 millirem standard that
3 said it's extremely low. I don't know if Chris wants
4 to address that. But they're extremely low numbers.
5 MR. McKENNEY: The question was at what
6 rate would the cancer rate increase with these sort of
7 dose rates.
8 And when you're talking down in the 25,
9 you're talking below -- first of all, there are no
10 studies out there because of -- that show actual
11 effect of low -- at these low levels because of the
12 natural variability.
13 25 is also among the range of the
14 difference between living in Denver and living in
15 Washington -- living on the seaboard of either side of
16 the country. There if you have homes with -- of radon,
17 you can be in the 800 to 900 range.
18 But in any event, you use very high dose
19 -- very high exposures of radiation to form our basis.
20 And we assume that those are still -- those relations
21 of how much cancer is caused by high, high doses from
22 an atomic bomb going off is about just thousands of
23 times high -- that -- that is going to be still
24 representative down to these low doses. But what
25 we're talking about even if you're exposed to

1 radiation at 25 millirem per year using that
2 assumption and you're exposed to that for your life --
3 for 30 years or more, we're talking that there is a
4 change in your incidence of cancer by about 1 to 2
5 tenths of a percent. So you rate of cancer dose --
6 your chance of cancer in America, and the average
7 person has about 20 to 25 percent chance of getting
8 cancer in their lifetime. Sorry -- the chance will go
9 up by about from 20 to 25 to 20.1 to 25.1.
10 Eating vegetables and doing all those
11 things can reduce your cancer a lot more than that
12 tenth of a percent. I mean, there's other factors in
13 your lifestyle that are much higher risk factors for
14 cancer.
15 PARTICIPANT: (Off microphone.)
16 MR. McKENNEY: You need to come to a
17 microphone.
18 PARTICIPANT: (Off microphone.)
19 MS. MILLER: I'm Sonny Miller and I spoke
20 earlier about the work of Dr. Chris Busby. And I
21 didn't give a website.
22 You can see his writings about this very
23 subject. Do the high dose cancer rates relate in a
24 straight line to the low dose cancer rates? And he
25 says no. That, in fact, at lower levels of radiation

1 there's a higher response rate than expected. And
2 this is an important fact.
3 In addition to that if it were true, and
4 I don't believe that it is that there would only be a
5 .1 percent increase in cancer, there are numerous and
6 I could only name a few of them, the health effects,
7 the Downs' Syndrome, diabetes, immune deficiency
8 diseases, other -- many -- multiple dose effects
9 including heart problems. The children in Chernobyl
10 are showing symptoms of heart disease they normally
11 thought of to be occurring in 70 year olds. And the
12 IAE or the International Atomic Energy Association,
13 IAEA, has control over whether the World Health
14 Organization can investigate and report on the health
15 effects from Chernobyl. And that's being repressed
16 because of language saying there has to be an
17 agreement before they can move ahead.
18 so, it's not surprising that as a culture
19 we are unaware of the low level radiation problems.
20 And I would like to refer to you our
21 website trapofpeace -- prominently right on the front
22 page you can link to an audio interview about this
23 problem of internalized radiation, the sources and the
24 effects of low level radiation and something called
25 the second event theory which talks about when we have

1 an internal source of radiation and our cells are
2 disrupted. They go into replication cycle. And during
3 about 12 hours, I believe it is, after the replication
4 cycle begins, that's exactly when the DNA is most
5 vulnerable. And when these internal source of
6 radiation, it's much more likely that cells in that
7 area are going to be bombarded again right during that
8 critical phase and damaged.
9 So I think that we can -- it's comforting
10 to imagine that there won't be many effects, but in
11 fact it would be more realistic to accept that this
12 site will never be clean, that is contaminated for all
13 of time, that the plumes will cause problems, that the
14 31 radionuclides put into the Deerfield River and
15 others that might have come out in the air emissions
16 have caused and will continue to cause for as much ten
17 times their half lives, not just the half life cycle
18 but as much as ten times their half lives, all these
19 damaging health effects. And we won't know which
20 health effects they were. We won't know which of the
21 women who are neighbors suffering breast cancer are
22 effected by these contaminants. We won't know which
23 children with Downs' Syndrome were caused by these
24 radionuclides. But it's very important -- you know, in
25 school we were told we're studying the problem; what

1 is an acceptable response. Because we were not taught
2 to be active citizens in school. But on our own we're
3 learning it.
4 And, yes, we've got to study the problem.
5 But let's accept that our performance as a culture on
6 the whole is shameful. You know, that we created
7 nuclear reactors in order to fuel the nuclear weapons
8 cycle. And that the nuclear weapons cycle is -- works
9 to destroy the world. And that the NRC has a role to
10 play. And as citizens we also have a role to play to
11 admit the horrors that we have been a part of our
12 through our, you know as I said, using the electricity
13 because it's convenient and it's comforting. But in
14 the long run, you know, it's going to get us. Right?
15 And the teachers in the nursery schools,
16 Head Start and whatnot, will tell you that children
17 are -- they're not performing as children used to.
18 That so many children have reading problems and
19 behavior problems and physical problems. That we've
20 really degraded the health of our society tremendously
21 during the whole of the nuclear age.
22 And I want to refer you to another book.
23 Oh, I should give you Chris Busby's website. LLRC.org
24 for low level radiation campaign.org. He does
25 excellent work and it's a great service to all of us

1 that he's doing it.

2 So thanks for your time.

3 MODERATOR CARIDDI: Is there anyone else

4 that would like to speak? There are no other names on

5 this list? Okay. Seeing none, I've been ask to have

6 one other person come back up again, and since other

7 people have already spoken twice.

8 MR. PERLMAN: A couple of clarifications.

9 One, since the resident farmer scenario is

10 one where you're measuring dose and not effect, then

11 I just want to make sure that Yankee is making it as

12 hard as possible for Yankee to meet it's requirements.

13 It's actually appropriate to use an adult in this

14 scenario because they eat more, drink more, have more

15 surface area to absorb radiation and so in fact, an

16 adult, am I correct, would have a higher dose than a

17 child would have? I'm not arguing whether the child

18 would have a greater effect, it would be a greater

19 effect on a child. But using this scenario I think it

20 is appropriate to use an adult. That's a higher

21 standard to meet since they ingest and are exposed to

22 a larger amount of radioactivity. Is that correct.

23 MR. McKENNEY: Yes, it is.

24 PARTICIPANT: (Off microphone.)

25 MR. McKENNEY: Yes. There could be

1 children present, yes. The adult because of his time
2 and all the proffers you've expressed here will
3 generally result in a numerically higher dose than a
4 child would.
5 MR. PERLMAN: Okay. There are a lot
6 problems, as everybody was pointing out, with this
7 site. The tritium leakage, the two CBs and we don't
8 now what else yet is going to surface. But there are
9 some problems that don't exist that were mentioned,
10 and I would hope that we don't spend a lot of time on
11 it.
12 I personally have been to at least two
13 meetings where NRC, EPA, DEP, ~~DPA~~ DPH were present either
14 in person or on the phone. One meeting, I guess was a
15 couple of weeks ago at the DEP office where everybody
16 was sharing information and everybody from all of
17 those agencies were at the meeting. Again, either
18 through speaker phone or in person. And that meeting
19 was specifically about the tritium plume and how
20 Yankee was going to test for it and what measurements
21 were being used.
22 So there's a lot to worry about at Yankee,
23 but there are some things that I think actually are
24 working reasonably well.
25 The last item that I had is I did ask a

1 question before, and I didn't really get an answer.
2 And that was until the full extent of the tritium
3 spill is determined and remediation is made, will the
4 NRC keep the license termination plan open?
5 MR. HICKMAN: We're going to do a
6 technical review of the ground water contamination and
7 the information they provide us. Depending on what our
8 review indicates, we could add a license condition to
9 the license termination plan. Meaning we could
10 approve the plan as it stands, but add certain
11 conditions about further monitoring, the level would
12 have to be at such-and-such -- a determined number, or
13 some other condition so that we could conditonalize it
14 so that they'd have to continue monitoring before
15 they could actually terminate the license.
16 MR. PERLMAN: Okay. And one last
17 question. Is there any circumstance under which you
18 would require remediation or would it be just that you
19 would not issue the license termination plan and force
20 them to hold their own until things just get diluted?
21 MR. HICKMAN: Well, it's not a matter of
22 issuing the plan. The plan is the criteria by which
23 the license --
24 MR. PERLMAN: No, I'm sorry. Are there any
25 circumstances under which you require remediation?

1 MR. HICKMAN: If they don't meet all the
2 appropriate levels, we would not terminate the
3 license.
4 MR. PERLMAN: Yes, but that's -- I
5 understand you wouldn't terminate the license. But
6 could you or would you require them to actively,
7 proactively attempt to remediate the ground water
8 contamination?
9 MS. ~~CLAUDIA:~~ CRAIG If they don't meet the
10 level?
11 MR. McKENNEY: If there were levels done
12 offsite that were unacceptable, at that point the
13 Commission always reserves the right to issue orders
14 which could include a cause for remediation. However,
15 the plume isn't yet near -- anywhere near the
16 boundaries of the site. But in a generic site, just
17 talking in generic terms, the Commission does have the
18 ability to issue order to cause all types of actions
19 including remediation to be done if it were such that
20 the material were to get off site on unacceptable
21 levels.
22 MR. PERLMAN: Okay. Thank you.
23 MODERATOR CARIDDI: Anyone else? Okay.
24 Seeing no other questions to be had, I assume the
25 panel is done.

1 PARTICIPANT: Did you get any maple syrup
2 yet?
3 MODERATOR CARIDDI: Did you get any maple
4 syrup yet?
5 MS. CLAUDIA: No.
CRAIG
6 Just on behalf of the Nuclear Regulatory
7 Commission, I'd like to thank you all for coming out
8 tonight, giving us your comments. That's the reason
9 why we do these public meetings. We want to hear from
10 the public about your concerns, your questions,
11 etcetera.
12 In order for us to improve these public
13 meetings, we have a public meeting feedback form and
14 we'd appreciate it if you'd fill it out. You can
15 either leave it here or you can mail it back to us if
16 you want to go home and fill out and think about it.
17 But that helps us to improve these types of meetings
18 as we go forward.
19 And once again, thank you for coming
20 tonight.
21 (Whereupon, the meeting was adjourned at
22 9:20 p.m.)
23
24
25

CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

Name of Proceeding: Public Meeting on Yankee Rowe License Termination Plan

Docket Number: 50-029

Location: Shelbourne Falls, MA

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

Arnold McLean
Official Reporter
Neal R. Gross & Co., Inc.