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1 UNITED STATES OF AMERICA

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3 THE NUCLEAR REGULATORY COMMISSION

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5 Public Outreach Meeting

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7 Regarding Potential Changes to

8 10 CFR Part 50, Appendix I

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10 THURSDAY

11 AUGUST 28, 2014

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13 HILTON LISLE/NAPERVILLE

14 3003 CORPORATE WEST DRIVE

15 THE BIRCH ROOM

16 LISLE, ILLINOIS 60532

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18 PRESENT:

19 NRC STAFF:

20 Richard Conatser

21 Cheryl Hausman

22 Tanya Hood

23 Gena Woodruff

24

25

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

2 (8:30 a.m.)

3 MR. CONATSER: Good morning. My name is
4 Richard Conatser. I work for the NRC at the NRC
5 Headquarters in Washington, DC, and I'm happy to be with
6 you today. There are not many people here today.
7 That's fine. But I'm here to ask a question. The
8 question is it time to change NRC's regulations for
9 radioactive effluents from nuclear power plants?
10 So I'm really happy to be here today. This
11 is kind of what I do. I do radioactive effluent-type
12 stuff, and I've done this for a number of years now.
13 So we've got a lot to cover this morning, and I do want
14 to open it up to questions to the public. But we've
15 got a lot to cover and so, before we do anything else,
16 I want to take just a couple of minutes to say why, to
17 describe why we are here.
18 The Nuclear Regulatory Commission staff is
19 evaluating the basis for our regulations that address
20 radioactive effluents from nuclear power plants. And
21 when I saw regulations, I mean the Code of Federal
22 Regulations. We call that the CFR. And it turns out
23 the regulations that we'll be talking about are from
24 Title 10 of the code. And Title 10 is energy, which
25 is where nuclear power plants fall.

1 And it's actually Part 50 of those
2 regulations, which is domestic licensing of production
3 and utilization facilities. And, last but not least,
4 there's only one subsection of that that we'll be
5 talking about, and that is Appendix I. So you may hear
6 me refer to these regulations on radioactive effluents
7 this morning as 10 CFR 50, Appendix I. And just to make
8 it shorter, I think I will just call it Appendix I this
9 morning.
10 So that's what we'll be discussing. These
11 regulations on radioactive effluents are based on some
12 recommendations from 1959. They were promulgated by
13 the International Commission on Radiological
14 Protection in their Publication No. 2. And we call
15 that ICRP-2. And so they are a little bit dated. The
16 terminology, the methodology, the dose calculations.
17 As a matter of fact, ICRP has updated these
18 calculations three times since ICRP-2 was published.
19 So NRC staff plans to write a regulatory basis document
20 to see if we want to update the regulations for
21 radioactive effluents to the most recent ICRP
22 publication, which is Publication 103. And we want to
23 get input from the public.
24 We want to know should we update the
25 regulations for radioactive effluents? Should we

1 update the terminology and methodology for doses and
2 dose calculations? And should we consider other
3 recommendations from the International Commission on
4 Radiological Protection in their Publication 103?
5 So this a Category 2 meeting. Next slide.
6 And this meeting is open to the public. The public is
7 invited to participate in this meeting by discussing
8 regulatory issues with the NRC at designated points
9 identified on the agenda. And I guess at this point
10 it would be good to go over, briefly, the agenda. And
11 then I'll introduce Cheryl Hausman who will go over some
12 logistics. Cheryl is our facilitator for the meeting
13 this morning.
14 And then when Cheryl is done with the
15 logistics, I'll come back up to the podium, and I've
16 got about another 45-minute presentation on Appendix
17 I; what it is, kind of the who, what, when, where, why
18 and how of Appendix I so that we're all on the same
19 playing field. Then we'll open it up to some questions
20 before we have a break. We'll come back after a break
21 in about an hour or so.
22 And then, I've got a list of questions to
23 go over to see if we can get any input from the members
24 of the public and all in attendance. So that's,
25 basically, our plan for this morning. I guess, at this

1 point, I'll introduce Cheryl Hausman from our Region
2 III offices, I believe, and she'll go over some
3 logistics. Cheryl.
4 MS. HAUSMAN: Good morning everyone, and
5 thank you for participating in the meeting today. My
6 name, as Richard said, is Cheryl Hausman, and I'm going
7 to be the facilitator for the meeting. Assisting with
8 the facilitation activities today is Gina Woodruff from
9 Region II. And my goal, as a facilitator, is just to
10 ensure, to make the meeting run smoothly, and to make
11 sure that everybody who has a chance to make a comment
12 or ask a question has the time to do that. So we're
13 going to try to keep this on time.
14 This is a Category 2 public meeting, and
15 the intent is to encourage active participation and
16 information exchange with the NRC industry
17 representatives and the public, to obtain comments on
18 Appendix I. So we're just going to go over a couple
19 of quick ground rules for the meeting today. If you
20 have any electronic devices, please put them on
21 vibrate.
22 The meeting is being transcribed today, so
23 we, if you have any conversations you need to take
24 outside the room, please do so. That way the
25 transcriptionist can get an accurate recording of the

1 meeting. The restrooms are located just down the main
2 hall to the right. And there are two exits in the room;
3 one here and one over to the back. Security presence
4 is here. That's standard practice for NRC public
5 meetings, just so you know. And if there's anything
6 that we need to like evacuate for any reason, we'll
7 follow their instructions.
8 The agenda for the meeting today includes
9 a presentation by NRC staff to review potential changes
10 to Appendix I. After the presentation, we'll take time
11 to solicit questions and comments from the audience
12 here, as well as participants who are on the audio
13 bridge and on the webinar. So, hopefully, everybody
14 signed in and received copies of the agenda. And also,
15 there's a feedback form by the door for NRC meetings,
16 if you would like to complete that.
17 We're going to have a couple breaks during
18 the presentation, and then lunch according to the
19 agenda. There are some discount coupons available for
20 the restaurant in the hotel. They're with the sign-in
21 sheets on the table out in front. And, before we get
22 started, I just want to remind everybody about the
23 transcription for the meeting. So if you do have a
24 question or comment, please raise your hand, I'll bring
25 you a microphone. Make sure you state your name

clearly and spell it so the transcriptionist can get an accurate recording.

And the NRC is always looking for ways to improve our meetings, and your feedback is very important. So there are some postage-paid public meeting feedback forms on the sign-in sheet table out front. Please feel free to fill one of those out and drop it in the mail, or give it to an NRC staff members and we'll take it back to headquarters. Any questions about the logistics? Okay, I'm going to turn the meeting back over to Richard, and he will begin the presentation. Thank you.

MR. CONATSER: Thank you, Cheryl. Okay, let's see, we will talk this morning about Appendix I. And one of the first things I thought we would do is, well, let's remind ourselves why we're here. We're here to see if we want to update these regulations to conform to the most recent methodology and terminology in ICRP Publication 103. And we're doing this because Appendix I is based on recommendations from 1959.

So to give you guys some perspective on this, I've got, I'll take a couple minutes here, digress, and go over some things that happened in the same year that Appendix I was published. Just so we can put this into perspective, I mean, science marches

on, obviously. A lot of science has changed over the last 60 years or so, 50 years, 30 years, whatever it is. But just time has passed on.

So let me go over a few things that occurred the same year that Appendix I was published. Muhammad Ali beat Joe Frazier in a 15-round technical knockout in the fight that became known as the "Thrilla in Manila." Microsoft was founded. Everyone knows Bill Gates, but he co-founder was Paul Allen. Sony introduced the betamax recorder, and that's no longer around, I don't think. Jimmy Hoffa was reported missing. And I guess that hasn't changed much. He is still missing.

The U.S. rolled out the first space shuttle. And all you Trekkie fans out there will know the name of that orbiter. Patty Hearst was captured in San Francisco by the FBI after her little run-in with the Symbionese Liberation Army. And lastly, a TV show premiered. The name was Saturday night live. The first host, guest host was George Carlin.

All this occurred in the year 1975, the same year Appendix I was published. And Appendix I was published on Cinco de Mayo, May 5th of that year. And it's been 39 years, three months and 23 days. Not that we're counting, but we're wondering whether or not we

1 should update the regulations. So let's take a look
2 at the title for Appendix I, because there's a lot in
3 the title. The title is actually quite a mouthful. It
4 says Numerical Guides for Design Objectives and
5 Limiting Conditions for Operation to Meet the Criterion
6 As Low as is Reasonably Achievable for Radioactive
7 Material in Light-Water-Cooled Nuclear Power Reactor
8 Effluents. That's quite a title. So maybe if we
9 decide to revise Appendix I, we could take a look at
10 shortening the title, perhaps.
11 But you know, once we look at it, there's
12 a lot of good things in the title, and I thought I'd
13 take a few minutes to point them out. First of all it
14 says there are numerical guides. That's telling you
15 that there are numbers in there that help to guide the
16 licensees. Obviously, there are regulations, but some
17 of the numbers are meant to be guides. And they're
18 guides for design objectives.
19 These are the objectives for the plant
20 systems; for their design, to make sure those systems
21 operate as they should. And if they don't, there are
22 limiting conditions for operation for those systems.
23 That, if they don't meet the numerical guides, then the
24 licensee is supposed to take some action and maintain
25 the systems or use the systems so that they keep

1 radioactive effluents as low as is reasonably
2 achievable; what we call ALARA, which is a regulation
3 and part of Appendix I, by the way.
4 And this deals with radioactive materials
5 in light-water-cooled nuclear power reactor effluents.
6 And keep that in mind as restricted to
7 light-water-cooled reactors. And now there are a lot
8 of licensees or applicants applying for different
9 technologies. So we may have to take a look at the
10 scope specified in the title to see if we want to expand
11 that scope. So that's the title.
12 Next slide. So what is Appendix I? Well,
13 nuclear power plants release radioactive materials,
14 and Appendix I is designed to help regulate that. The
15 radioactive releases are sometimes referred to as
16 radioactive effluents, or radioactive emissions. And
17 for brevity in this presentation this morning, I'll
18 discuss those in terms of just effluents. It's just
19 understood that they'll be radioactive effluents or
20 radioactive emissions from the power plants.
21 And the NRC regulations require monitoring
22 effluents from nuclear power plants, and Appendix I
23 helps in that regard. The NRC regulations require
24 licensees to demonstrate compliance with the low as
25 reasonably achievable requirement. That's in

1 Appendix I. And NRC regulations require reporting
2 radioactive effluents. And NRC inspectors, and we
3 have several inspectors here this morning, do the
4 routine inspections of the power plants to make sure
5 all these regulations are implemented.
6 And what I thought we'd do is look over each
7 of these items on this slide in a little bit more detail
8 in the next few slides here. So next slide; this is
9 slide No. 6. And, by the way, we do have people on the
10 webinar, I guess, so they can follow along. I'll try
11 to give the slide numbers, but if you have any questions
12 on where we are, let me know.
13 So radioactive releases. Releases are
14 often referred to as radioactive effluents. And
15 effluents are regulated by the NRC, and those include
16 waste generated during operation of the facility. And
17 for Appendix I, the scope of the effluents; it deals
18 with liquid effluents, which are water, and gaseous
19 effluents, which are the effluents to the atmosphere.
20 And the dose from natural radiation is typically a
21 hundred to a thousand times higher than the doses from
22 the radioactive releases at nuclear power plants.
23 So I wanted to put this into perspective,
24 because we'll be talking about radioactive releases
25 this morning. But the releases that we'll be talking

1 about are typically very small. So let's take a few
2 minutes just to go over that. Next slide. Here's a
3 little graphic that shows the various exposure pathways
4 for members of the public. And in this little like
5 cartoon-type figure here it shows some people, and it
6 has some exposure pathways.
7 And you can see at the top that they get
8 radiation from space; we call it cosmic radiation.
9 They get some dose from the structures that we build.
10 The stone structures have somewhat more radioactive
11 materials in them than wooden structures. But
12 everything has some radioactive material in it, they're
13 being exposed to radioactive materials from natural
14 sources all the time. It shows a picture of a house
15 up there; the same thing.
16 Rocks and soil all contain natural
17 radioactive materials. It shows ingestion from
18 drinking water and eating like fish or various other
19 foods. And those have radioactive materials in them,
20 naturally. And it shows a cow on there eating grass
21 from a pasture. And, of course, the grass has a little
22 bit of radioactive material in it, naturally, and so
23 does the cow. And so when humans, then, ingest meat,
24 they're ingesting some radioactive materials.
25 And we show irrigation up there. If it would

1 irrigate crops, some of that water, if there was
2 radioactive material in it, would get into the crops.
3 And those could be ingested. And, of course,
4 radioactive materials from nuclear power plants are
5 released to the environment, and contribute also to
6 part of this uptake.
7 So on the next slide it shows kind of the
8 breakdown of the doses that the average person in the
9 United States receives from radiation in a year. And
10 this is kind of good. I will go over some of the larger
11 segments here first. The largest segment there, 37
12 percent of the radiation that a member of the public
13 receives in a year, comes from radon and thoron, and
14 those are natural radioactive materials in the air and
15 the soil. And that's part of background radiation.
16 And, you know, I'm not quite sure why we still
17 call that thoron; that's an old term. That's really
18 radon-220. We renamed that back in 1923. But you'll
19 often see that, thoron, because it's a product of
20 thorium from the soil. So that's the biggest thing,
21 37 percent.
22 The next biggest thing up there is medical.
23 And that's the large purple segment on the right-hand
24 side, and the other two segments around it. So we have
25 the tomography from medical treatments. We have the

1 nuclear medicines that are administered. We have
2 fluoroscopy, and then conventional radiography and
3 X-rays.
4 All those contribute almost half. It's 24
5 percent from tomography, 12 percent from nuclear
6 medicine, seven percent from fluoroscopy, and five
7 percent from other medical uses. So those amount for
8 almost half of the radioactive dose that people get in
9 a year.
10 Other things, up toward the top, cosmic
11 radiation from space, about five percent. Internal
12 radiation from your bodies, because we are composed of
13 carbon and we have potassium, and both of those have
14 natural radioactive isotopes in your body. And we get
15 about five percent from our own bodies, from internal
16 radiation. We get about three percent from
17 terrestrial sources, rocks and soil.
18 We get two percent from consumer sources,
19 such as smoke detectors, wrist watches, various,
20 various things that people buy that have radioactive
21 materials in them. And then, toward the bottom, there
22 are two very thin slices; one is for occupational
23 exposure. These are the workers on all, across all the
24 workforce, not just nuclear power plants. But the
25 average that the person in the United States would

1 receive is less than .1 percent of the total.

2 And then, for members of the public, they

3 also receive less than .1 percent of the radiation they

4 get in a year from nuclear power plants. So that kind

5 of breaks it down to what Appendix I kind of governs.

6 So let's go to the next slide on how we monitor the

7 effluents from nuclear power plants.

8 Licensees are required to have

9 instrumentation that continuously monitors the

10 significant waste streams. Licensees are required to

11 sample the effluents at specified intervals. And

12 licensees measure the activity, and they usually

13 measure that in terms of curies in the United States.

14 So they measure the curies of the effluents being

15 discharged. And they typically will measure this

16 prior to the release, during the release, and after the

17 release.

18 Then licensees use that to calculate the

19 doses. And those doses are calculated in units of

20 millirad or millirem, based on the activity that's

21 measured. And then NRC inspects. Our inspectors

22 inspect these measurement records. And Appendix I

23 contains provisions for sampling the effluents and

24 sample the environment in which those effluents are

25 released. Next slide.

1 These effluents have to be ALARA. The
2 licensees compare the radioactive releases from their
3 power plants to the release limits. And the release
4 limits are based on NRC's design objectives for plant
5 systems. These are the design objectives from
6 Appendix I, and those are in Appendix I 10 CFR Part 50.
7 And Appendix I contains both numerical guides and
8 requirements, such as the controlling operation of
9 plant systems.
10 Appendix I provides a method for licensees
11 to use to demonstrate ALARA. And if doses are not as
12 low as reasonably achievable, then licensees have to
13 take action to operate the plant systems to ensure
14 effluents remain a small fraction of the radiation dose
15 standards in 10 CFR 50. It actually has to maintain
16 a small fraction of the limits in 10 CRF 20, and that
17 limit is 100 millirem annually. And Appendix I is
18 designed to ensure that the effluents doses are as low
19 as reasonably achievable, and that the dose limits in
20 10 CFR 20 are not exceeded. Next Slide.
21 So how do the licensees report these
22 effluents? NRC requires licensees to report the
23 radioactive effluents, and we have some guidance. We
24 have Regulatory Guide 1.21, and I'll read the title of
25 that real quick. It's Measuring, Evaluating and

1 Reporting Radioactivity in Solid Waste and Releases of
2 Radioactive Materials in Liquid and Gaseous Effluents
3 From Light-Water-Cooled Nuclear Power Plants. So
4 licensees report their effluents in accordance with
5 this regulatory guide.
6 And when they report those, they put this
7 into an annual report that they submit to the NRC. The
8 NRC puts those annual reports in our database we call
9 ADAMS. This is the agency-wide document and
10 management system, and I forget what the A stands for
11 right now. But we do keep all these reports in the
12 database, and those are available to the public.
13 And, as a matter of fact, all the effluents
14 reports since 2005 are on the NRC's public web page,
15 and I have the link up here in the presentation. So
16 the public can see exactly what the radioactive
17 effluents are from each of the power plants in all the
18 years. And these have been, these reports have been
19 submitted since the licensees have operated the power
20 plants.
21 Now, the NRC has published summaries of these
22 reports. We have 104 nuclear reactors in the United
23 States at 65 different sites. And if you read all of
24 those reports, it would be thousands and thousands of
25 pages of material. So the NRC has summarized those by

1 calendar year, and we have put out a report which is
2 a summary report, and we put this into a NUREG.
3 This is NUREG 2907 Volume 15. These are the
4 annual report of effluents from calendar year 2009.
5 And we are getting around to doing reports from each
6 calendar year. And this is also published on the web
7 page listed up here. So the effluents from nuclear
8 power plants are available to the public, and a summary
9 of those is also available to the public.
10 And I have the ADAMS accession numbers up
11 here on the slide if anyone would want to look at this
12 report, these reports that the NRC has published for
13 calendar years 2007, 2008 and 2009. You can click on
14 that link, and it will take you to the NRC's web page.
15 So let's take a look at what the effluents trends have
16 been over the years. Next slide.
17 This is a graph that shows the trend in noble
18 gasses in gaseous effluents released over the last 34
19 years from both boiling water reactors and pressurized
20 water reactors in the United States. This covers years
21 1975 to 2009, and I want to point out it is on a
22 logarithmic graph. What that means is on the Y axis
23 each one of those divisions is 10 times the preceding.
24 So you see on the Y axis it goes from one curie
25 of noble gas to 10 curies to 100 curies. And you can

1 see a downward trend over the years from both boiling
2 water reactors and pressurized water reactors. As a
3 matter of fact, just as an example of this, if you look
4 at boiling water reactors in 1975, the releases were
5 about 40 curies of noble gas in a year. In 2009, from
6 BWR's it was 30.7 curies. That's a 99.92 percent
7 reduction in nobles gasses over that time period.
8 And that's pretty much what we would expect.
9 The NRC has regulations that say radioactive effluents
10 should be as low as is reasonably achievable, so we
11 should be seeing a decrease in the effluents, and we
12 are. Same thing for pressurized water reactors. And
13 the next slide shows a similar graph for liquid
14 effluents. These are the mixed fission and activation
15 products; kind of what we call particulates in the
16 liquid.
17 And these are the mixed fission and
18 activation products over the last 34 years. And again,
19 this is a semi-logarithmic graph where the Y axis is
20 10 times the previous division. And you can see, and
21 I'll just go over one here from boiling water reactors,
22 again. You see in 1978 the median activity from
23 boiling water reactors was about 1,000 millicuries.
24 And in 2009, the average was 2.8 millicuries.
25 So that means that over that 34-year period there was

1 a 99.7 percent reduction in the particulates in liquid
2 effluents, on average, from all the power plants.
3 Again, showing a decreasing trend, as what we would
4 expect. Okay. So those are the effluents. Appendix
5 I regulates all of this. Next slide.
6 So now let's talk again on Appendix I. It's
7 not a very big part of the regulations. It comprises
8 about four pages of the Code of Federal Regulations,
9 if you open up the Code and look at it. The NRC
10 regulations in Appendix I use the ICRP Publication 2
11 methodology from 1959. And the regulations for
12 occupational exposure use recommendations from
13 ICRP-26. And licensees use other ICRP
14 recommendations, as well.
15 And those are still good for the public, for
16 public exposure and for protection of the worker. But
17 we have some issues in that there are multiple methods
18 of calculating dose. If a health physicist is
19 calculating dose for radioactive effluents, they get
20 millirem in one set of units. If a health physicist
21 is calculating dose for occupational exposure, they get
22 millirem in a different set of units.
23 So, although this works, we have multiple
24 methods of calculating dose, and actually multiple
25 definitions of dose. So we want to align all of those,

1 and we do that with Appendix I, a potential change to
2 Appendix I. And, like I said, Appendix I covers four
3 pages in the regulations. And the first section is on
4 introduction. And I've got Appendix I on poster boards
5 in the back of the room here.
6 Section I is the introduction. Section II
7 are guides on design objectives. Section III covers
8 implementation. Section IV covers guides on technical
9 specifications for limiting conditions of operation.
10 And Section V covers the effective dates. And
11 following Section V, we have what we call the concluding
12 statements from the, concluding statements of the
13 position of the regulatory staff.
14 We call that Docket RM-50-2 for rule making
15 50-2. And those concluding statements address those
16 power reactors who were operating before Appendix I was
17 published. Next slide. And I just went over this, as
18 a matter of fact. We talk about how the regulations
19 use different ICRP recommendations. And we have
20 opportunities to align Part 20, Part 50 Appendix I, and
21 all regulations into one common set of standards for
22 calculating dose and millirem. Next slide.
23 In the Commission, the Nuclear Regulatory
24 Commission, the commissioners have recognized this,
25 and they have provided direction in what we call staff

1 requirements memoranda or SRM. And the SRM number is
2 listed up here. And the Commission, the commissioners
3 told the staff to develop a regulatory basis for a
4 revision of Part 20 and Appendix I to align with the
5 most recent methodology and terminology. And that
6 happens to be from ICRP-103, which are the 2007
7 recommendations.
8 Now the Commission, when they wrote their
9 ruling in the staff requirements memoranda, they had
10 specific instructions to the staff for what to change
11 in Part 20 of the regulations. They had no explicit
12 instructions for what to change in Appendix I, but the
13 central theme in the staff requirements memoranda was
14 that the NRC would have alignment on how we calculate
15 dose and how we report dose. So that's what we would
16 want to do if we would revise Appendix I. Next slide.
17 So what is a regulatory basis? The
18 Commission told us to develop a regulatory basis. A
19 regulatory basis, when we write this, is going to
20 contain options for proposed changes to the
21 regulations. It is going to have an evaluation of
22 those proposed changes. It will have a justification
23 for the proposed changes. And then staff will make
24 some recommendations to the commissioners who, then,
25 will decide whether we want to change Appendix I or not.

1 So what is the process the NRC is going
2 through right now? We are trying to engage the public
3 and the stakeholders and industry and others, and get
4 their input. We will collect the input, evaluate the
5 feedback, and then we'll develop one regulatory basis
6 for Appendix I, and a separate regulatory basis for Part
7 20. Part 20 is the part of the regulation covering
8 occupational exposure, and it actually introduces a lot
9 of the terminology that Appendix I uses. And then the
10 Commission will, like I said, review the merits of the
11 regulatory bases that we submit to them, and they will
12 vote on whether to proceed with rule making or not.
13 Next slide.
14 So the logistics, the office of new reactors
15 or NRO, that's the office that I work in, is leading
16 the Appendix I effort at the NRC. And the office of
17 state materials and environmental is leading the Part
18 20 effort at the NRC. And the staff requirements
19 memoranda called for separate rule making and separate
20 bases, and so that's what we're proceeding with right
21 now.
22 And, as you can see, it's going to require
23 some coordination. The Part 20 working group at the
24 NRC is going to have to work with the Appendix I working
25 group, and we are. And there's a separate group at the

1 NRC that's updating all the regulatory guides that
2 implement Appendix I, and so we are working with them
3 because we are slowly updating the regulatory guides
4 that are a little old, 30 years old.
5 And we're working with Oak Ridge National
6 Laboratories who are developing the dose coefficients
7 that we will use in any change to the regulations. And
8 there is a group that looking at the cost benefit
9 criteria. That's the cost benefit for as low as is
10 reasonably achievable. Right now, we have a number
11 specified in Appendix I of $1,000 per man-rem. And
12 that means that licensees would need to spend that much
13 money if they can save each man-rem, and they'll have
14 to spend that money on rad waste systems or systems to
15 reduce radioactive effluents.
16 And we're working, also, with the federal
17 family, EPA and DOE and others, who also have
18 regulations that are based on various recommendations
19 from the International Commission on Radiological
20 Protection. So that we hope at the end of this process
21 we would have all the federal families on the same page
22 on how we calculate doses in the United States and, in
23 deed, across the world. Okay, next slide.
24 Our tentative schedule; we're holding public
25 meetings. We had a public meeting in Savannah, Georgia

1 earlier this summer. We're conducting this meeting
2 here in Chicago. And we'll have another meeting in
3 Washington, DC on the 10th of October. And we have,
4 tentatively, we're working on an advanced notice for
5 proposed rulemaking. And we originally targeted a due
6 date for October, 2014. And the NRC is now looking at
7 options on whether we think we need an ANPR, and
8 advanced notice for proposed rulemaking on this. So
9 more to come on that.
10 And we will revise regulatory guides. There
11 are a handful of regulatory guides that would be changed
12 if we would revise Appendix I. And it will take some
13 time period to revise all of those, and we would start
14 that effort in 2014, and that would go on to 2020. Oak
15 Ridge will publish does coefficients that we need for
16 the basis document. And we expect to get those dose
17 coefficients from Oak Ridge in 2015. We will complete
18 the basis document in 2015.
19 And then revise the computer codes. There
20 are computer codes that calculate doses from liquid and
21 gaseous effluents. We call the liquid code LADTAP and
22 the gaseous code, GASPAR. And those would have to be
23 updated with all the new dose coefficients. That would
24 be done approximately 2017, if the Commission decides
25 to proceed with rule making.

1 Then we would prepare a proposed rule in
2 2018, and publish the final rule 2020. So this is the
3 tentative schedule. So this is a multi-year effort,
4 and we're at the very beginning stages of it, and that's
5 why we want to get input from the public at this time.
6 Next slide.
7 So we have some opportunities for revising
8 Appendix I. First of all, the dose concepts.
9 Appendix I uses the term total body dose to report the
10 effluents, the dose from effluents. But ICRP-103
11 doesn't use that term. It uses different units.
12 They're called effective dose. The dose in both those
13 cases, whether it's a total body dose or an effective
14 dose, is the dose to an individual.
15 So they're very similar in concept, but they
16 have different units, and they're calculated in
17 different ways. So the thought is maybe we could just
18 change the units from total body dose to effective dose.
19 For example, we have a design objective for, of three
20 millirem for liquid effluents from nuclear power plants
21 in a year, total body. So the one option on the table
22 is to keep the three millirem as the design objective,
23 but to change the units from total body dose to
24 effective dose.
25 That would seem like a very simple change.

1 And we're not trying to change the depth or the, how
2 much protection is afforded under Appendix I. We're
3 going to try to keep the same level of protection. So
4 the first concept would be just to change the units and
5 leave the numerical values the same.
6 The next concept is to replace terminologies
7 and numerical values. For example, in the current
8 Appendix I we have a concept of organ dose where
9 licensees report doses, for example, to the thyroid.
10 And they do that by calculating the gaseous releases,
11 calculating the millirem from gaseous releases, and
12 they come up with an organ dose, a dose to the thyroid.
13 And right now we have a limit, a design objective in
14 Appendix I that's 15 millirem in a year.
15 So the concept there would be do we want to
16 keep organ dose as 15 millirem per year under ICRP-103.
17 And certainly we could do that, but ICRP-103 likes the
18 concept of effective dose, the dose to the whole body,
19 the risk to the whole body of an individual. So we're
20 contemplating changing from organ dose to effective
21 dose. So what would that mean? Let's think about that
22 for a second.
23 If it's 15 millirem to the thyroid, which is
24 a gland in the throat here, there's much less impact
25 on the entire body. As a matter of fact, if you do the

1 numbers, there's math behind all of this. I've gone
2 through the math on this. If you calculate for iodide
3 exposure to the thyroid at 15 millirem in a year, the
4 equivalent dose to the whole body would be about half
5 of a millirem.
6 So we're thinking, if we eliminate organ
7 dose, maybe we could adopt effective dose. But that
8 means we would change the numerical value from 15
9 millirem, perhaps, to a half a millirem, or whatever
10 that number happens to be. We don't know yet. We
11 don't have all the dose coefficients from Oak Ridge
12 National Laboratories yet. So those are some things
13 we're thinking about.
14 Right now, also in Appendix I, we calculate
15 air doses in millirad. And these are doses to air at
16 the site boundary of nuclear facilities. And so, we
17 have to think well, do we want to keep doses to air,
18 or would we want to switch that to doses to a human to
19 make it more applicable, and change that to an effective
20 dose, which would be in millirem. And, of course,
21 there's people on both sides of the fence on this.
22 Some people are saying you know the dose to
23 air, those coefficients don't change as often as the
24 dose to human. So maybe we would want to keep the dose
25 to air, so you wouldn't have to change the regulations

1 so much. Others are saying no, we would like to
2 calculate dose to the humans, which is the real impact
3 that we're concerned with. So that's another thing
4 we'll be looking at.
5 Also, the concept of skin dose and skin dose
6 rates, and total body dose and total body dose rates,
7 are in Appendix I and the guidance that supports
8 Appendix I. So the thought there is do we keep the skin
9 dose rate and total body dose rate, or do we change over
10 to an effective dose and an effective dose rate?
11 Something to think about there, too, because
12 licensees use the total body dose rate, which is 500
13 millirem per year, as a rate, an instantaneous rate.
14 They use that to set the set points on the rad monitors,
15 the radiation monitors for the gaseous effluents. So
16 if we change that to effective dose, the licensees would
17 have to look at the set points on their radiation
18 monitors, and change them accordingly as appropriate.
19 So we're trying to bring up these different
20 tentacles. If we would change Appendix I, it reaches
21 out; the ripples impact different things. I'm just
22 trying to highlight a few of those now. Another item
23 here is replacing concepts and numerical values such
24 as the concept of a maximum exposed individual. Right
25 now, Appendix I uses the concept of the maximum exposed

1 individual.

2 Licensees calculate a dose to the maximum

3 individual located nearest to the site. And right now,

4 Appendix I uses four different age groups. ICRP-103

5 uses six age groups. So we could change that from four

6 age groups to six. That would mean additional tables

7 at the end of one of our regulatory guides, and that

8 is Regulatory Guide 1.109.

9 And I have a copy of that here. The title

10 of Regulatory Guide 1.109 is Calculation of Annual

11 Doses to Man From Routine Releases of Reactors

12 Effluents for the Purpose of Evaluating Compliance with

13 10 CFR Part 50, Appendix I. So if we change from four

14 age groups to six age groups, we would have to change

15 all the tables in the back of this document to

16 accommodate the six age groups, and we can certainly

17 do that.

18 Oh, by the way, the International Commission

19 on Radiological Protection adds two additional age

20 groups for pre-adolescence. So the children and below

21 actually get added in. We had one previously for the

22 child. And now there are, I believe, three age groups

23 and pre-adolescent for ICRP-103. So we're wondering

24 whether to change to those age groups.

25 Another item are the effluents control

1 limits or the ECLs. These are the limits for
2 radioactive effluents, and these limits are actually
3 located in 10 CFR Part 20. And they're currently based
4 on an adult, but the NRC put in there a factor of two
5 to account for other age groups to make it conservative.
6 So, under ICRP-103, they use a different
7 concept called the reference individual or reference
8 person. That's more a per capita composite individual,
9 which it would be age and gender weighted for how many
10 males and females are in the population, and what the
11 different age groups would be. So it's more like a
12 representative person. So we could go to that type of
13 a concept to change the ECLs in Part 20. And do we want
14 to do that? That's a question to be asked.
15 And lastly up here, should the design
16 objectives for liquid effluents be the same as the
17 design objectives for gaseous effluents? A millirem
18 is a millirem, right? Dose is dose. Right now, for
19 liquid effluents, we have a design objective of three
20 millirem annually.
21 And for gaseous effluents, we have, well it's
22 not quite a design objective, its a reference value,
23 but we have five millirem. So should those be the same,
24 the same value? That's another item we would like to
25 discuss. Different opportunities, dose concepts.

1 Okay, let's look at some other opportunities. Next
2 slide.
3 These are opportunities on implementation if
4 we would change Appendix I. The first one is do we want
5 to keep the concluding statements from the staff that
6 addresses the nuclear power plants that were licensed
7 prior to the current version of Appendix I? Do we want
8 to keep that in the regulations? Do we want to drop
9 that from the regulations? We would like to hear
10 comments about that.
11 The schedule for implementation. If the NRC
12 would decide to change Appendix I, how much time should
13 we allow licensees to implement those new regulations?
14 When we changed Appendix I last time, I believe we
15 allowed two years for implementation. And that's for
16 licensees to change their set points, change their
17 training programs, change their procedures. All of
18 that would have to be changed, and it will take time
19 to do that. So how much time should be allowed? We
20 want to hear back on that.
21 Cost benefit criteria. Currently Appendix
22 I contains a value of $1,000 per man-rem. And, of
23 course, the ICRP-103 guidance talks about person-rem,
24 first of all. We no longer use the term man-rem. And
25 then the value of $1,000; do we want to keep that?

1 There is discussion about increasing that to $2,000 or
2 some other figure, and putting that figure in Appendix
3 I. So we'll have to decide what figure goes into
4 Appendix I.
5 And changing supporting documents. Right
6 now, there are about 15 different regulatory guides
7 that support Appendix I, about 25 NUREGs. And let me
8 give you some background. NUREGs are information
9 documents from the NRC. REG guides are guidance from
10 the NRC. And the licensees may use the REG guides for
11 guidance. And the NUREGs are, basically, there for
12 information.
13 There's about 25 NUREGs that could be
14 impacted, and there's a whole host of what we call
15 generic communications. Those are like individual
16 letters, shorter documents, that contain additional
17 communications from the NRC, official communications,
18 related to Appendix I. And back at my desk at the
19 office I have a three-ring binder, and it's about a half
20 inch or an inch thick, that has different generic
21 communications on radioactive effluents. So we would
22 have to take a look at all those.
23 So there are a lot of things that would have
24 to be changed, potentially, if we would, on how we would
25 implement Appendix I, and those are a few items. Next

1 slide.

2 There's some other opportunities, and these

3 relate to organization of Appendix I. Right now,

4 Appendix I has a certain organization of the sections.

5 And I'm going to take Section II as an example. And

6 Section II is organized in a systems-type approach, and

7 that makes sense. It has design objectives for the

8 plant systems. And in Appendix I in Section II, it

9 groups those sections by the release type; the type of

10 radionuclide that's released.

11 For example, all of liquid releases are in

12 Section II.A, two alpha. All the gaseous releases of

13 noble gases are in Section II.B, two bravo. All releases

14 of other radionuclides and gaseous releases are in

15 Section II.C, two Charlie. So, should we keep that

16 same organization, or would we want to change that?

17 Right now we have a REG guide, I mentioned

18 it earlier, REG Guide 1.21 for reporting effluents. As

19 it turns out, we report effluents in a manner similar

20 to the organization in Appendix I, by liquids and then

21 by gases, as noble gases and other radionuclides from

22 gaseous releases. So if we change the organization in

23 Appendix I, do we change the way those radionuclides

24 would be reported in the annual reports? Something to

25 think about.

1 Another item there in the Section II.C, two
2 Charlie, where it's gaseous releases of other
3 radionuclides, in Appendix I it lists iodides and
4 particulates, but really that includes tritium which
5 isn't explicitly mentioned in Appendix I, nor does it
6 include Carbon 14. That's not explicitly mentioned in
7 Appendix I. Should those be added, explicitly, to the
8 regulation?
9 And under Section II.B up there, for gaseous
10 releases of noble gases, I'll just point out that's
11 where we had the gamma air and beta air dose design
12 objectives. And that's where we mention the skin does
13 and total body dose, as well, in that section. So do
14 we want to keep the organization of Appendix I the same,
15 or should it be changed? Some different opportunities
16 there. Next slide.
17 Now, what authority does the staff have for
18 changing Appendix I? Well, the commissioners told the
19 staff to develop the basis for a revision of Part 20
20 in Appendix I, and then they said other parts will need
21 to be changed as soon as practical. That's other parts
22 of the regulations, the Code of Federal Regulations.
23 And I have listed up here the different parts.
24 And I'm not going to list all the numbers,
25 but it turns out there's 17 different parts of the

1 regulation that contain definitions or terminologies
2 or some changes that would relate to what we're doing
3 in Appendix I, and 10 CFR Part 20, that would have to
4 be changed, potentially. So the current plan is we
5 would have separate regulatory actions for those parts
6 of the regulations.
7 But, of course, the NRC is thinking about
8 that, and considering the cumulative effects of
9 regulations. We, obviously, wouldn't want to have 17
10 different rule making efforts for these small scope
11 changes in these different parts of the regulations.
12 So we'll have to work through how to do that most
13 effectively so we minimize the cumulative effect of
14 regulations. Next slide.
15 So, at this point, I guess we are going to
16 go to a break. But before we do, we can open it up for
17 a question and answer period on anything we've
18 discussed so far. And I guess at this point maybe I
19 will turn it over to our facilitators again, and they
20 can guide us through. I think they're going to have
21 microphones and we'll help to address any questions.
22 So, Cheryl, would you like to come up and go
23 over the ground rules for asking questions. And then
24 we'll just open it up for some questions on the bridge
25 line and for the webinar participants, and the people

1 here in the room.

2 MS. HAUSMAN: Thank you, Richard. If

3 anybody has a question or a comment on the presentation

4 and the material you've just seen, please raise your

5 hand, and I will bring you a microphone. If you have

6 a question or comments, please make sure you state your

7 name and spell it for the transcriptionist so we can

8 get an accurate reporting.

9 Okay, nobody in the audience has any

10 questions or comments at this time. We'll open it up

11 to the people on the bridge line.

12 TELEPHONE OPERATOR: At this time, if you

13 would like to ask a question, please press *1 and when

14 prompted record your first and last name. There are

15 no questions from the audio participants at this time.

16 MS. HAUSMAN: Okay, thank you. Are there

17 any questions from the web participants? Okay, thank

18 you.

19 MR. CONATSER: Okay. Since there are no

20 questions right now, I think we will go to a break. And

21 we will take, Tanya, when should we reconvene?

22 MS. HOOD: We have scheduled to reconvene at

23 9:40. That's about 13 minutes.

24 MR. CONATSER: So we'll reconvene at 9:40,

25 which is about 13 minutes from now. And so, if you

1 would, check back in at 9:40. Thank you.
2 (Off the record.)
3 MR. CONATSER: We can get started again.
4 TELEPHONE OPERATOR: I'm now opening your
5 phone lines.
6 MR. CONATSER: Thank you, operator. And I
7 think it is 9:40. I have my watch here somewhere.
8 Yes, 9:40. Let's go ahead and get started. I have
9 checked on the webinar. There are not many people on
10 the webinar, nor on the phone lines. So there may not
11 be many questions today. But we do have a list of
12 questions we would like to cover this morning. And we
13 are going to spend as much time on these as there are
14 questions. And if there are not many questions, we
15 will finish up a little bit early today, and that is
16 fine.
17 So let's go into these questions now. Let
18 me recap what we did this morning. We introduced 10
19 CFR 50, Appendix I, and we introduced what it's used
20 for, for radioactive effluents. And we said that the
21 terminology and methodology from Appendix I is based
22 on 1959 vintage terminology and methodology, and that
23 we're looking to update that.
24 And we wanted to get input from the public.
25 And here's some questions that we've outlined that

1 might stimulate some thought. And I will go through
2 these and, I guess since there are just a few people
3 here, what I would like to do is just go through, and
4 then if anyone has a question on anything in particular,
5 just break in at any time, and we will entertain those
6 questions.
7 Or if you just have comments on something,
8 maybe not a question, but you want to provide a comment
9 on one of the items being addressed, or anything else
10 on your mind relative to Appendix I, then please do just
11 break in. So Question 1, we'll start with the most
12 simple concept here. Should Appendix I be changed or
13 should it not? It's been there since, like we said,
14 39 years, three months and 23 days today. So, should
15 we change it or should we not?
16 And if we should, what are the advantages of
17 changing it? What are the disadvantages or changing
18 it or not changing it? What are some of the costs? The
19 impacts to both boiling water reactions and pressurized
20 water reactors. And are there benefits to changing
21 Appendix I to align with ICRP-103, the recommendations
22 from 2007? Or should changes to Appendix I be delayed
23 until future ICRP recommendations?
24 So I guess I'll open up the floor of questions
25 on should we change Appendix I. Would anyone want to

1 provide a comment on that? I'll open it up, I guess,
2 to people in the room first. And on the phone. Any
3 questions on the phone?
4 TELEPHONE OPERATOR: There are no questions
5 from the audio participants at this time.
6 MR. CONATSER: Anything from the webinar?
7 This is going to go very quickly this morning.
8 Question 2: What is the scope of changes that should
9 be made to Appendix I? For example, should it be a very
10 limited scope with only a few things such as changing
11 Appendix I, for example, the design objectives for
12 total body only? Just the units. Keeping all the
13 numerical values the same. A very limited approach.
14 As you can see, that's just one option. And
15 changing, then, the Regulatory Guide 1.109, the tables
16 that are in the back that would be related to that. So
17 that would be a very narrow scope change. We call that
18 a very limited change. So should we do a very limited
19 change? Should we do, on the other hand, a full change?
20 Now, a full change, we would change the
21 Regulatory Guide 1.109, all the dose coefficients in
22 the back, all the dose factors. We could change the
23 other regulatory guides that implement Appendix I, as
24 well. Those are Regulatory Guides 1.110, which are the
25 cost benefit analysis, 1.111, which is for gaseous

1 releases and atmospheric dispersion of gaseous
2 releases. Because there are new models now for
3 calculating releases to the atmosphere, newer models
4 since what ICRP-2 had used, and what are currently in
5 Appendix I.
6 REG Guide 1.112 talks about releases of
7 radioactive materials of liquid and gaseous effluents.
8 And REG Guide 1.113, which is estimating liquid
9 dispersion in streams and rivers, oceans, et cetera.
10 There have been a lot of advances in that science in
11 the last 39 years. So we could change all those REG
12 guides, a whole host of other REG guides, a complete
13 overhaul.
14 We could change the 25 NUREGs, all the
15 generic communications, which would be new dispersion
16 factors, new dilution models, even evaluate new rad
17 waste system designs, even the source term. We have
18 a document out there that describes the source term that
19 is currently used. We could update that for a new
20 source term. So there could be lots of changes to a
21 full change. Or do we want something in between?
22 Right now, the NRC is leaning towards some
23 change in between a very limited change and a full
24 change. And what I will do is, instead of asking if
25 there are comments on this, I'm just going to proceed

on. So, if you do have any questions, just chime in at any time.

Question 3: Limit technical changes to Appendix I that align with ICRP-103. Okay, do we keep the numerical values that are currently in the design objectives? For example, do we keep the three millirem for liquid releases, and just change the units from total body to effective dose? Do we eliminate the organ dose entirely, and change over to effective dose? Or are there benefits to calculating doses to individual organs?

Do we eliminate the gamma air and beta air doses for gaseous releases? Do we update the cost benefit criteria? That's the $1,000 per man-rem. And, in fact, a lot of licensees use values of $7,000 to $10,000 per man-rem, and they use it for various different design changes to their facility. So we'll have to take a look at whether or not we want to change that value.

And do we expand the scope beyond just light-water reactors? There are applicants looking at small modular designs, gas cooled-type reactors, other reactors that don't generate plutonium so we don't have the proliferation problems. So other reactors will be licensed in the next 30 or 40 years. Should we change

1 Appendix I for that? And remember, that was in the
2 title of Appendix I.
3 Do we eliminate the skin dose? The total
4 body dose? And what do we do about the dose rates?
5 Would we want to keep those in the guidance documents?
6 And what about reporting? If we change Appendix I,
7 should licensees continue to report in the same manner
8 they have been reporting for the last 35 years, in some
9 cases? Or should they begin reporting in a new format?
10 Because, if we would calculate doses in a
11 different way, you would have a step change, perhaps,
12 in the does being reported. But, in looking at this
13 with what we know today, we don't expect any big changes
14 in the doses being reported. And, do we keep matching
15 the Appendix I organization of the document, those
16 different sections in Appendix I, to the Regulatory
17 Guide 1.21 for reporting? So, would we have to change
18 Regulatory Guide 1.21?
19 Any comments or questions on any of that?
20 Next question. This one is one that has come up quite
21 often in the past few years. Should the NRC include
22 both metric and English units? Right now, the
23 Commission has directed that licensees can continue to
24 use the traditional units, which would be curies. Now,
25 in some of our regulations for some of the occupational

1 and shipping documents, manifests, I believe that the
2 SI units are required.
3 But, with those few exceptions, the
4 Commission has said to use traditional units. But,
5 should we then also begin using the SI units, maybe in
6 parentheses, following the traditional units? And if
7 we did it that way, let's think about that for a moment,
8 I don't know how many of you have read these reports
9 from the licensees, the annual reports on effluents.
10 They're typically 30, 40, maybe 100 pages
11 long, a lot of tables of numbers. So I'm looking, you
12 know, in my mind's eye here I'm pulling up one of those
13 reports, looking at those tables. Right now it's
14 reported all in curies, the traditional units. If we
15 would report those with parentheses and the SI units,
16 it could become very confusing, a lot of numbers on the
17 page.
18 As a matter of fact, it might clutter the page
19 very significantly. So it's something to think about
20 if we would go to a different type reporting. Would
21 that be an undue burden on the licensees? We're
22 looking for comment on that. And what would the cost
23 be for the licensees to do any change like that?
24 Next question, Question 5: What effective
25 date should be included for any revision of Appendix

1 I? This goes back to the cumulative effects of
2 regulations. How much time should licensees be
3 afforded to make this change? Because they're doing
4 a lot of other changes for other NRC orders, et cetera.
5 Right now there are a lot of licensee changes because
6 of the Fukashima incident in Japan.
7 So we want to hear from people on how much
8 time should be allowed for implementing any change to
9 Appendix I. Because they'll have to change their
10 programs, the training, their procedures. And are
11 there any actions that the licensees could take to
12 minimize the implementation time? We'd be interested
13 in hearing that to try to minimize any delay in
14 implementation, if we would decide to change Appendix
15 I.
16 And are there other NRC requirements that
17 compete with any changes to Appendix I, like
18 confirmatory orders, et cetera? And lastly, are there
19 any unintentional consequences that may arise from
20 changes to Appendix I? Any comments on any of those
21 questions? No comments. So next slide.
22 At this point, then, we've gone through these
23 questions very rapidly. Have not gotten any comments,
24 but we do want to thank everyone for attending. The
25 NRC staff will be available for about 30 minutes

following the meeting to answer any questions you might have. And for openness and transparency, the transcript of today's meeting will be posted on the NRC's web page at some point in the future. I don't know exactly when, Tanya, we're going to do that.

MS. HOOD: Approximately two weeks.

MR. CONATSER: Approximately two weeks. And we are videotaping this today. And I know we had videotaped the previous public meeting. We have not posted the previous one yet because of some technical issues. But we do want to get the video up there, as well, so people could see the meeting. And with that, then, I will open it up --

TELEPHONE OPERATOR: Excuse me. This is the operator.

MR. CONATSER: Yes, operator.

TELEPHONE OPERATOR: We have a question.

MR. CONATSER: Okay.

TELEPHONE OPERATOR: The first question comes from Jerry Hiatt. Your line is now open.

MR. HIATT: Good morning, Richard, how are you doing?

MR. CONATSER: Good, Jerry.

MR. HIATT: Just, did I hear you say during the presentation that an ANPR may not be issued, or did

1 I just misinterpret something?

2 MR. CONATSER: Well, there has been some
3 discussion very recently at the NRC as to whether an
4 ANPR would be beneficial for the industry and the
5 public. So yes, we are looking at that. There has
6 been some discussion at some level. It is very
7 preliminary at this point. Right now, we're
8 continuing down the path of an ANPR, but there are some
9 discussions underway. So we would certainly like to
10 hear what you have to, what your thoughts would be on
11 that, Jerry.

12 MR. HIATT: Okay. I appreciate it. And
13 just another comment I actually have, too, as well.
14 When you're factoring in costs, are you also going to
15 be factoring in the cost of applying the changes based
16 upon the ANPR or 10 CFR 20?

17 MR. CONATSER: Since these will be separate
18 rule making efforts, we have one rule making effort for
19 10 CFR Part 20 and a different rule making effort for
20 Appendix I, the cost would be calculated separately,
21 I supposed. You know, we hadn't looked at it in that
22 depth, Jerry, I guess. But we would certainly do some
23 separate costs.

24 But now, some costs will be shared because,
25 for example, if in Part 20 they change over to effective

1 dose, of course, in Appendix I we would probably go
2 along with that. So there would be some shared costs
3 between the two rule making efforts. But I think some
4 things would be different. Like in Part 20 they have
5 to deal with the issues of dose to the embryo fetus,
6 dose to the lens of the eye. They have different issues
7 with Part 20.
8 So they may have some different costs that
9 would not be associated with Appendix I. So there
10 would be some shared costs, and some costs that would
11 not be shared. But, hopefully, between the two rule
12 making efforts and the two basis, the regulatory basis
13 documents that we'll develop will cover all that,
14 Jerry.
15 MR. HIATT: And then, finally Richard, how
16 are you coordinating with the EPA on their potential
17 changes to 40 CFR 190 to, you know, to, I'm sure
18 stakeholders, if the NRC makes changes and then the EPA
19 makes changes, are they going to align so we don't get
20 hit doubly?
21 MR. CONATSER: That's a very good question.
22 Right now, EPA has issued an advanced notice for
23 proposed rulemaking to change one of their regulations.
24 And this is 40 CFR 190, as you indicated in your question
25 there. This is the regulation on dose in the general

1 environment outside the bounds of nuclear facilities
2 or just in the general environment.
3 And yes, the EPA, those regulations are based
4 on the 1959 recommendations from ICRP-2, just like
5 Appendix I. So they're pretty much in the same boat
6 as the NRC. They're wanting to see if, and I don't want
7 to speak for the EPA here, but you can read their ANPR.
8 The ANPR indicates that they're looking to see whether
9 or not they should update those, that regulation, 40
10 CFR 190.
11 So yes, I've been talking to Brian Littleton.
12 He is the counterpart to me on EPA for the technical
13 lead on that part in EPA. And I've actually had some
14 phone conversations with EPA and DOE to try to get
15 alignment between all the federal agencies. So I know,
16 up until this point, different agencies have been
17 implementing different ICRP recommendations.
18 So we're trying to get everyone on the same
19 page, and I think that's our wish right now, that's our
20 desire. We'll see how this proceeds. This is going
21 to be a long effort, a multi-year effort. But yes, we
22 are in conversations with the other members of the
23 federal family, and we're trying to get alignment from
24 everyone on this.
25 MR. HIATT: Okay. And this is a question

1 based upon my interest more than anything else. If an
2 ANPR is not issued, how would you solicit a stakeholder
3 comments?
4 MR. CONATSER: Yeah, you know, I don't want
5 to speculate on how we would do that if we wouldn't issue
6 an ANPR, because right now we don't know whether we're
7 going to stop that process. Right now, we have an ANPR
8 well on its way to being written, and it's in the review
9 process now. So I don't want to speculate on what we
10 would do. Obviously, if we would, though, have to, if
11 we would decide to scuttle the ANPR, there would have
12 to be some type of a communication mechanism to
13 communicate this. And we would have to look at what
14 those options would be, Jerry.
15 MR. HIATT: Thank you. Sorry to monopolize
16 all the questions, Richard.
17 MR. CONATSER: That's fine. And do you have
18 any thoughts on the ANPR? I know you're representing
19 NEI, I guess, in the industry. Does NEI have any
20 thoughts on whether they would like to see an ANPR or
21 not? Or what would you think?
22 MR. HIATT: That's one where I'll have to
23 kind of get back with our legal folks and ask the
24 question. I'm not knowledgeable of how else you would
25 solicit the stakeholder input. So I'll talk to our

1 folks and, if you don't, give you a call.

2 MR. CONATSER: That sounds great. And

3 anyone else want to monopolize the questions? I guess,

4 then, at this point it takes us back to wrapping up the

5 presentation. Like I said, we will have the

6 transcripts available in two weeks on the NRC web page.

7 And we do have feedback forms available if you're on

8 the phone or bridge line. And if you would like a

9 feedback form, you can write to, how would they do that,

10 Tanya?

11 MS. HOOD: The feedback forms will be posted

12 on the public meeting website. Once this meeting ends

13 today, they'll be able to go online. For those that

14 are present, there are feedback forms on the sign-in

15 table.

16 MR. CONATSER: Okay. I'm not sure if you

17 heard that over the lines there, but Tanya said if you

18 go to our web page for the meeting announcement, the

19 feedback form is there for those people who are on the

20 phone or on the bridge line or on the webinar. And for

21 the people here in the audience, we have feedback forms

22 out on the tables out front. And any closing comments

23 from anyone? At this point, then, I'll close the

24 meeting. Thank you very much.

25 (Whereupon at 10:02 a.m. the meeting

1 was concluded.)