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and Transuranic Waste

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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PUBLIC WEBINAR TO DISCUSS THE DRAFT REGULATORY BASIS  
FOR THE DISPOSAL OF GREATER-THAN-CLASS C (GTCC) AND  
TRANSURANIC WASTE

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THURSDAY,

AUGUST 22, 2019

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ROCKVILLE, MARYLAND

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The Meeting convened via teleconference  
and webinar at 1:00 p.m. Eastern Daylight Time, Sarah  
Lopas, Facilitator, presiding.

PRESENT

SARAH LOPAS, Facilitator

DAVID ESH

PATRICIA HOLAHAN

STEVE KOENICK

TIM MCCARTIN

CARDELIA MAUPIN

FRED SCHOFER

TABLE OF CONTENTS

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

Welcome/Introduction . . . . . 3

Background and Overview: Draft Regulatory Basis for  
the Disposal of GTCC and Transuranic Waste . . . 7

Discussion of Draft Regulatory Basis . . . . . 31

Meeting Recap and Closure . . . . . 98

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

1:03 p.m.

1  
2  
3 MS. LOPAS: Hi, good afternoon, everybody.  
4 Welcome to the Nuclear Regulatory Commission's public  
5 webinar on the Draft Regulatory Basis for the disposal  
6 of greater-than-Class C and transuranic waste.

7 My name is Sarah Lopas and I'll be  
8 facilitating today's webinar. In just a moment I'm  
9 going to review our short agenda and the logistics of  
10 today's webinar, but I do want to first hand the  
11 meeting over to Patricia Holahan, or Trish Holahan,  
12 who is the Director the Division of Decommissioning  
13 Uranium Recovery and Waste Programs, for our welcome.  
14 Trish.

15 MS. HOLAHAN: Okay, thank you very much.  
16 Good afternoon, I would like to thank you for  
17 participating in today's webinar. I'm Trish Holahan,  
18 the recently appointed Division Director of the  
19 Division of Decommissioning Uranium Recovery and Waste  
20 Programs, as Sarah mentioned, in the Office of Nuclear  
21 Material Safety and Safeguards.

22 This organization led the development of  
23 the Draft Greater-Than-Class C Regulatory Basis, which  
24 is a tool that the NRC uses to examine the technical,  
25 legal, policy, and administrative components of a

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1 regulatory issue, while considering whether enter the  
2 rulemaking stage. In addition, the information in the  
3 Draft Regulatory Basis should be considered  
4 preliminary.

5 With me in the room are various folks that  
6 support us. Steve Koenick, the Branch Chief of the  
7 Low Level Waste and Programs Branch. And speaking  
8 will be Cardelia Maupin, the senior PM for the  
9 Regulatory Basis. And also Tim McCartin, a senior  
10 level advisor for performance assessment.

11 Because various disciplines were needed to  
12 examine the GTCC, greater-than-Class C waste disposal,  
13 the working group assigned this task consists of  
14 representatives from various organizations within NMSF  
15 and across the NRC, which include the Risk and  
16 Technical Analysis Branch for performance assessment  
17 and the decommissioning group. The NMSS Division of  
18 Rulemaking for cost analysis. And the senior PM, Gary  
19 Comfort, was also instrumental.

20 The Division of Materials Safety,  
21 Security, State and Tribal Programs, the Agreement  
22 State and tribal aspects. The Division of Spent Fuel  
23 Management, performance assessment and criticality  
24 safety analysis. The Office of Nuclear Security and  
25 Incident Response for the security and safeguards

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1 issues. And also the Office of General Counsel for  
2 legal and policy issues.

3 In addition, contractual support was  
4 provided from the Center for Nuclear Waste Regulatory  
5 Analyses Southwest Research Institute in San Antonio,  
6 TX.

7 As background information, in 2018, the NC  
8 issued a Federal Register Notice and held two public  
9 meetings seeking stakeholders' input relative to the  
10 identification of potential issues associated with  
11 GTCC waste disposal. These activities, along with the  
12 comment letters received in response to the Federal  
13 Register Notice, helped to inform the Draft Reg Basis,  
14 as well as other factors.

15 The NRC staff looks forward to discussing  
16 the Draft Regulatory Basis with you at today's  
17 webinar. And at that point, I'll turn the meeting  
18 back over to our facilitator, Sarah Lopas.

19 MS. LOPAS: All right, thanks, Trish. So  
20 the purpose of today's meeting is, as Trish mentioned,  
21 is that we're here to answer your questions on the  
22 preliminary findings and discuss Draft Regulatory  
23 Basis for disposal of GTCC and transuranic waste.

24 I do want to point out that we are in the  
25 middle of a 60-day public comment period on this Draft

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1 Regulatory Basis document, and that public comment  
2 period ends on September 20. But I want to be clear  
3 that staff is not accepting comments today during this  
4 meeting.

5 So Cardelia is going to discuss during her  
6 presentation how you can submit your written comment.  
7 So just to be clear, what you say today is not going  
8 to go on the record. The purpose of today is to  
9 discuss and ask questions of the staff.

10 I will say that Cardelia and Tim are going  
11 to walk us through their presentation, their slide set  
12 that we're going to go through on the webinar. And  
13 then we'll be opening up the bridge line one by one to  
14 answer your questions. So you'll be able to answer  
15 questions over the, or ask questions over the phone.

16 And you can also type your questions using  
17 the question function in the webinar. I'm happy to  
18 read aloud your questions for the staff to answer.  
19 And when we get to that point I'll explain a little  
20 bit more, but that'll be after the staff presentation,  
21 after Tim and Cardelia present.

22 And then before I hand it over to  
23 Cardelia, the last thing I want to point out is that  
24 if you're on webinar, I have attached a couple  
25 handouts to the webinar that you can download.

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1           So I have attached a PDF copy of the  
2 slides, so you can download a copy of the slides. And  
3 I've also attached a copy of the actual Draft  
4 Regulatory Basis that you can download as well.

5           So with that, I think I'm going to hand it  
6 over to Cardelia. And please send me a note via the  
7 webinar if you have issues hearing us. We did have to  
8 make a last minute room switch, so the audio might not  
9 be as great as we want, but we're going to try to make  
10 sure that Tim and Cardelia speak up.

11           MS. MAUPIN: Okay, thank you so much,  
12 Sarah. It's my pleasure to talk to you today about  
13 our efforts regarding GTCC and transuranic waste.

14           If you've ever been at the NRC complex or  
15 visit our website or been in one of our public  
16 meetings, you might have heard of our concept of our  
17 principle of good regulation. And one of our  
18 principles of good regulation is that nuclear  
19 regulation is the public's business and it must be  
20 transacted publicly and candidly.

21           So as you look at slide 2, and at the  
22 purpose of this meeting, that is what we are walking  
23 into today, one of NRC's principles of good  
24 regulation. We believe that the public must be  
25 informed about and have the opportunity to participate

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1 in the regulatory processes as required by law and in  
2 good public interest.

3 Today we're going, you're going to have  
4 the opportunity to participate and get involved as the  
5 NRC continues its efforts to develop a Regulatory  
6 Basis for the disposal of greater-than-Class C waste.  
7 In moving forward, I will not be saying GTCC and  
8 transuranic because what we've seen is that in many of  
9 the GTCC waste streams that transuranic waste is a  
10 subset of GTCC, too.

11 During today's meeting the NRC staff will  
12 describe the background and considerations in the  
13 Draft Regulatory Basis and give the public an  
14 opportunity to ask questions about the document. We  
15 believe that through these interactions, we should be  
16 able to assist you in the submission of your comments  
17 on the draft regulatory program -- on the Draft  
18 Regulatory Basis.

19 Furthermore, today's meeting supports  
20 NRC's openness strategy. As I said earlier, the NRC  
21 is committed to public and other stakeholder  
22 participation in its decisionmaking processes. As  
23 such, we are committed to transparency, participation,  
24 and collaboration with the public and various other  
25 regulatory -- and our various other stakeholders and

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1 regulatory partners.

2 Finally, today's meeting supports NRC's  
3 cumulative effects of regulation initiative in that  
4 the NRC encourages stakeholder participation early on  
5 in any potential regulatory change in order to assess  
6 the potential challenges that that change could have  
7 on licensees, Agreement States, or other impacted  
8 entities. Next slide please.

9 Now we are on slide 3. On slide 3, we're  
10 going to talk about low level waste as it is defined  
11 by NRC regulations in 10 CFR Part 61. We will begin  
12 by defining the concept of GTCC under this framework.

13 Firstly, the Low Level Waste Policy  
14 Amendments Act of 1980 defined low level waste as  
15 basically as what it is not. It is not classified as  
16 high level radioactive waste, transuranic waste, spent  
17 nuclear fuel, or by-product material, as defined in  
18 Section 11(e)(2) of the Atomic Energy Act.

19 The first time ever that low level waste  
20 was defined in law was in this 1980 law. In addition,  
21 after the law was passed, the NRC developed its  
22 regulations for low level waste disposal in Part 61,  
23 which is entitled the licensing requirements of land  
24 disposal of radioactive waste. In Part 61, in Section  
25 61.55, it contains the first ever classification

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1 system for low level waste. And that is as Class A,  
2 B, or C.

3 These groups are based on the radiological  
4 hazards depending on the concentration of certain  
5 radionuclides. As switched, Class A would be your  
6 least hazardous, B would be kind of in the middle, and  
7 Class C would be the most hazardous of these three.

8 So basically Part 61 says that these  
9 wastes, A, B, and C, are accessible for near surface  
10 disposal under the requirements that are outlined  
11 there in Part 61. Also in 61.55 with this  
12 classification system, it describes this other waste.

13 And this other waste that's beyond the  
14 hazard of Class C, that waste that is not, the  
15 regulations said that that is not generally acceptable  
16 for near surface disposal and is for which the waste  
17 form and disposal methods must be different and in  
18 general more stringent than those described in Part  
19 61.

20 So the NRC put that regulation in effect.  
21 It was in 1982, it was implemented in 1983. And then  
22 subsequently in 1985, the Low Level Waste Policy  
23 Amendments Act was passed, and it changed the  
24 definition of low level waste.

25 In that practice of this new act, it no

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1 longer said that transuranic waste should be excluded  
2 from low level waste. One of the things that this  
3 group is going to consider is the addition of this,  
4 the definition of transuranic waste to the NRC's  
5 regulatory definition in Part 61. And we will get to  
6 that a little bit later. So next slide, please.

7           Currently, this slide, this figure shows  
8 that there are four existing low level waste, low  
9 level reactive waste disposal facilities that are  
10 currently commercially licensed in the United States,  
11 all of which are in Agreement States. The first one  
12 there being US Ecology in Washington, which takes  
13 Classes A, B, and C.

14           Utah is a whole different one, the one in  
15 Clive. It only takes Class A. We have the Waste  
16 Control Specialists in Andrews, TX. It also receives  
17 A, B, and C. And Barnwell, and the last one's the  
18 fourth one being the facility in Barnwell, at  
19 Barnwell, SC, which also takes A, B, and C. So  
20 currently, all four of the operating low level waste  
21 disposal facilities are licensed and located in  
22 Agreement States. Next slide, please.

23           As I said earlier, this whole regulatory  
24 framework for low level waste was only developed after  
25 the NRC developed its regulations in 10 CFR Part 61 I

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1 1982. So as I said, Part 61 basically has said that  
2 material waste that is greater than Class C is not  
3 generally acceptable for near surface disposal. And  
4 so that's what, a part of our mission with this group  
5 is to look at that.

6 So, but the best report that we have in  
7 terms of looking at the types, the quantities, the  
8 different types of waste streams have been done by our  
9 colleagues from the Department of Energy.

10 MS. LOPAS: The audio is lost. Hey,  
11 Lorraine, are you there, Lorraine, our operator?  
12 Lorraine, our operator? Yeah, let us know where you  
13 lost us here on slide, what I'm showing is Slide 5,  
14 three categories of GTCC waste. Can somebody give me  
15 some feedback here on slide 5? Back two slides, let's  
16 see. It was only gone for about a minute. Okay,  
17 maybe start over on slide 5 here. Yeah, the  
18 activated, if you don't mind.

19 MS. MAUPIN: No worries, no worries.

20 MS. LOPAS: Okay, thank you, everybody.  
21 I appreciate it. It was our colleagues at DOE, that's  
22 where it was.

23 MS. MAUPIN: Okay, our colleagues at DOE  
24 have, in their environmental impact has greater than-  
25 Class C has basically divided greater-than-Class C

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1 into three categories, which are represented by the  
2 images on this slide. The first one being activated  
3 metals, the internal metal components of reactor  
4 vessels. The second one being field sources that are  
5 used in industrial and medical applications.

6 And then we have this third, other waste,  
7 which is a very broad category that can include a  
8 number of things that might be generated during the  
9 process of decommissioning a facility.

10 So I would like to go to the next slide.  
11 Okay, now on slide 6 we're going to talk about GTCC  
12 waste disposal has been assigned a federal  
13 responsibility. I mentioned to you earlier the Low  
14 Level Radioactive Waste Policy Amendment Act of 1985.  
15 In that legislation, it said a number of things about  
16 greater-than-Class C.

17 Basically, it said that greater-than-Class  
18 C disposal is a federal responsibility, in that the  
19 NRC is to license and determine that a facility is  
20 adequate to protect the public health and safety. In  
21 addition, the law assigned requirements for DOE. In  
22 that law, DOE was directed to develop recommendations  
23 and options for the safe disposal of all greater-than-  
24 Class C waste, which they completed in February of  
25 1987.

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1           Basically, about 20 years have passed and  
2 there has been, we have the Energy Policy Act of 2005,  
3 which is basically designed to get some more traction  
4 on this issue of greater-than-Class C and a facility  
5 where it can be disposed of. And in that law, some 20  
6 years later, a number of actions were assigned to DOE.

7           Basically, the Congress said DOE, you're  
8 responsible for completing activities needed to  
9 provide a GTCC waste disposal facility. And in  
10 response, DOE in February of 2011 completed a draft  
11 Environmental Impact Statement regarding what they  
12 call GTCC low level radioactive waste and GTCC-like  
13 waste.

14           And you might be asking what is GTCC  
15 versus this GTCC-like that DOE was talking about in  
16 its EIS? Basically, GTCC that is licensed and  
17 generated by NRC and Agreement State licensees is  
18 considered what we call GTCC in the DOE's report.

19           There's other ways that might be generated  
20 under DOE's activities that has characteristics  
21 similar to what we've described as greater-than-Class  
22 C waste and is -- it's non-weapons or non-defense  
23 generated. That's probably one of the keys there,  
24 non-defense generated, and it is generated by, under  
25 DOE activity.

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1           Then in February of 2016, DOE finalized  
2           its EIS on greater-than-Class C disposal. And this  
3           has come to be one of the most comprehensive  
4           information that we have in terms of, as I said,  
5           greater-than-Class C waste. And in addition, the  
6           Energy Policy Act of 2005 told DOE that they are to  
7           come up with a report and provide to Congress on  
8           various disposal alternatives for greater-than-Class  
9           C waste, which DOE completed in November of 2017.

10           And the last thing there, the Energy  
11           Policy Act that, after submitting that report, they  
12           are to await congressional action. At present, no  
13           congressional action has been taken, so we are still  
14           in that, at that level right now. Next slide, please.

15           So now let's get into what, how the NRC is  
16           in the issue. And then we'll get to why we developed  
17           the Draft Regulatory Basis. In January of 2015, Texas  
18           submitted to the NRC a letter requesting clarification  
19           on its authority as an Agreement State to license  
20           disposal of greater-than-Class C waste.

21           Texas inquired because the Waste Control  
22           Specialists, as I mentioned earlier, which are in  
23           Andrews, TX, have petitioned Texas to remove its  
24           prohibition on the disposal of greater-than-Class C  
25           waste at its facility, and these prohibitions are

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1 contained in Texas's regulatory program or laws and  
2 regulations.

3 When we say an Agreement State, Agreement  
4 State is a state that has entered into an agreement  
5 with the NRC whereby we would relinquish portions of  
6 our authority derived under the Atomic Energy Act and  
7 that states would exercise that authority. So that is  
8 why Texas asked us that question.

9 In response to the letter from Texas, the  
10 NRC staff developed, in July of 2015, SECY-15-0094,  
11 which discussed the historical and current issues  
12 relative to the disposal of greater-than-Class C.  
13 This was an effort to answer the letter from Texas.  
14 The Commission then, in December of that year, of  
15 2015, responded to the SECY paper and provided some  
16 directions to the staff.

17 Basically, they said we want you to  
18 prepare a regulatory basis for the disposal of  
19 greater-than-Class C waste through means other than a  
20 deep geologic disposal. And this was to be done after  
21 the completion of the Part 61 rulemaking.

22 In addition, the Commission said, okay,  
23 the Low Level Waste Policy Amendments Act no longer  
24 excluded transuranic waste from the definition of low  
25 level waste, so we want you to address the definition

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1 of transuranic waste in your, in the Reg Basis and in  
2 Part 61. So that's part of our effort as well.

3 Subsequently, in October of last year, of  
4 2018, the Commission directed the staff to no longer  
5 couple the effort of developing this Regulatory Basis  
6 with Part 61. They said we want you to move forward  
7 because we want to see if there any regulatory or  
8 issues associated with this issue of greater-than-  
9 Class C that we need to address, and we want to get  
10 early involvement. We want to get our stakeholders  
11 involved in this issue as soon as possible.

12 So that's another reason why we are having  
13 this webinar today. Next slide, please. So that gets  
14 us to our, in July of this year, July 22, we published  
15 that Draft Regulatory Basis, and we are inviting  
16 comments. Then we're, as I said, having this webinar  
17 today.

18 In addition, we have a public meeting that  
19 is planned on August 27th in Austin, TX. As Sarah  
20 reminded everyone, there is a 60-day comment period  
21 for, on the Draft Regulatory Basis, and that ends on  
22 September 20. So you want to keep that in mind.

23 We really welcome your comments in writing  
24 and we look forward to your help on this issue. Now  
25 I'm going to turn it over to my colleague, Tim

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1 McCartin.

2 MR. MCCARTIN: Hello, and I'll be starting  
3 on slide 9. And in the next few slides I hope to give  
4 a summary of how we analyzed the near surface disposal  
5 of greater-than-Class C waste and what our preliminary  
6 findings were.

7 And as Cardelia mentioned, we got our  
8 inventories from DOE's final Environmental Impact  
9 Statement for greater-than-Class C waste. As she  
10 stated, in that EIS you'll see the three categories,  
11 activated metals, sealed sources, and an other  
12 category. What you won't see is we took the  
13 information in that report and we divided it into  
14 seven very specific waste streams.

15 We did those 17 waste streams because they  
16 identify very distinct streams of the greater-Class C  
17 waste that have among very specific waste form and  
18 inventories associated with them. And in looking at  
19 the hazards of the disposal of the waste, it was  
20 important to keep things separate in that way.

21 And you'll see that as I go through my  
22 talk, but that's why there are 17 waste streams in our  
23 Regulatory Basis. You will not -- you'll see the  
24 information related to those waste streams in the  
25 FEIS, but DOE did not break them out in that

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1 particular way.

2 We considered three alternatives for  
3 implementation of disposal of greater-than-Class C  
4 waste under 10 CFR Part 61. The first one is no  
5 regulatory change. And let me just explain that  
6 briefly, what that means currently.

7 In Part 61, the Commission can decide on  
8 a case-by-case basis whether to allow disposal of  
9 greater-than-Class C waste in somewhere other than a  
10 geological depository. And so that would still remain  
11 in effect, and that would mean someone would need to  
12 come in and to ask the Commission to act on an  
13 application.

14 The other would be we don't make  
15 regulatory changes but we issue guidance on what would  
16 be expected in any type of application for greater-  
17 than-Class C waste disposal. And what types of  
18 criteria and things we would be looking for accepting  
19 such applications.

20 And the third is actually do a rulemaking,  
21 which could also include guidance, like we actually  
22 would changes Part 63 and put specific requirements in  
23 10 CFR Part 61 for the disposal of greater-than-Class  
24 C waste in the near surface.

25 I'll give the results up front and you'll

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1 see how that plays out in the later slides, but we did  
2 find the majority of the greater-than-Class C waste in  
3 DOE's Environmental Impact Statement was potentially  
4 suitable for a near surface disposal and was  
5 approximately 80% of the overall volume of waste.

6 Of that waste that we found potentially  
7 suitable, most, approximately 95% of that volume, was  
8 potentially suitable and could be regulated by an  
9 Agreement State. And in terms of the, if I go to  
10 slide 10, you'll see there's a pie chart that is  
11 approximately 12,000 cubic meters of greater-than-  
12 Class C waste.

13 And there's two particular categories of  
14 it, greater-than-Class C and greater-than-Class C-  
15 like, that Cardelia spoke. And then we also have, in  
16 DOE's FEIS, they had a designation of category 1 and  
17 2, which was existing, what we would call existing.

18 And it was waste that would be existed by  
19 current licensed activities that are currently going  
20 on or going on in the future. But there's been a  
21 decision that these activities would occur. That's  
22 what we would call existing waste, it either exists  
23 today or will, we know it will be existing in the  
24 future.

25 The second is potential waste, and that's

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1 volcanism or activities that no decision has been made  
2 to undertake these activities or license these  
3 facilities. But if they did go forward, it would  
4 develop these types of waste. And we can see it's  
5 approximately half and half. Half is approximately  
6 existing, half is potential.

7           The best way to give some concrete example  
8 for this is I'll use commercial reactors. They  
9 generate greater-than-Class C waste. It's activated  
10 metal waste, the piping and the reactor internals.  
11 That waste is generated when a reactor primarily is  
12 decommissioned. So there is a little bit that's  
13 generated during the lifetime of the reactor due to  
14 maintenance, but most of it is generated after the  
15 reactor ends its operating license.

16           That's the existing waste would be for all  
17 the licensed reactors today, most of which is going to  
18 be generated in the future. There also is the  
19 potential for new reactors to be licensed in the  
20 future. There aren't any license facilities  
21 applications there that are being approved, but this  
22 accounts for ones in that future that may be, an  
23 application may be submitted and approved and  
24 eventually it would generate waste. That's potential.

25           If those facilities are never licensed or

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1 an application is never received, well, that waste  
2 would not be generated. But that's where the 12,000  
3 cubic meters, the total is. And you can see there's  
4 a combination of approximately 50% for each existing  
5 and potential.

6 There also is the GTCC versus GTCC-like.  
7 And you can see it's approximately there. It's more  
8 a quarter of the waste is the greater-than-Class C-  
9 like waste versus approximately three-quarters is the  
10 greater-than-Class C waste.

11 Going to the next slide, and this probably  
12 shows the largest single reason for keeping our 17  
13 waste streams, and it has to do with the amount of  
14 transuranic radionuclides that are present in the  
15 waste. And there I have five bore charts. And you  
16 can see at the high end it's greater than 10,000  
17 nanocuries per gram, and at the lower end it's less  
18 than 10 nanocuries per gram.

19 So there is a large spread in the amount  
20 of transuranic radionuclides in these waste streams.  
21 And there was a desire to keep that separate. Those  
22 are very distinct quantities, and they have an impact  
23 on the hazard analysis. And so that is really  
24 probably the best rationale I will say for explaining  
25 why we developed these 17 waste streams.

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1           Going to the next slide, that would be  
2           slide 12, in terms of doing the analysis, there were  
3           a couple things that need to be assumed for a  
4           technical analysis. In terms of the disposal facility  
5           design, as we said, we were talking about near surface  
6           disposal. This would be in the top 30 meters of the  
7           land surface.

8           We also looked at, on average, a disposal  
9           thickness of one waste container. And I will say  
10          where that's important is in the intruder analysis,  
11          especially a drilling intruder where you've drilled  
12          through something. Well, if you drill through one  
13          container, you bring up so much waste. If you  
14          actually have two containers, twice as much. Three  
15          containers -- so it is a, you can see the impact.

16          Things would get twice as, depending on  
17          the thickness of the waste. We chose on average one.  
18          We did vary some things to get a sense of the impact.  
19          But that is one of the assumptions that's important to  
20          that analysis, especially for the analysis of the  
21          intruder.

22          In terms of the exposure assessment, we  
23          did as we could account for the waste form. And the  
24          best example there is the activated metal waste from  
25          commercial reactors. Generally, it's stainless steel.

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1 Well, stainless steel does not corrode very easily, it  
2 doesn't, you know, it doesn't flake up in the air and  
3 create things that, a release in the air. And so we  
4 assumed a low degradation rate of stainless steel as  
5 for the exposure assessments.

6 And then a number of the other assumptions  
7 we made were consistent with the analyses that were  
8 done in the early 1980s that supported that  
9 classification tables in 10 CFR Part 61, the Class A,  
10 B, and C that Cardelia talked about. We want to have  
11 analyses that were somewhat comparable to what was  
12 done back then.

13 Going to the next slide, 13, in terms of  
14 the hazards, what were the kinds of things we were  
15 looking at. And first there's, you have actually have  
16 to receive the waste to the facility and you handle it  
17 before you put it in some type of disposal unit.  
18 Well, when you're handling these packages, certainly  
19 for the workers, a large amount, I think approximately  
20 at least a third maybe to a half of the waste in DOE's  
21 FEIS, its Environmental Impact Statement, was what was  
22 called remote handled.

23 Well, remote handled meant the direct  
24 radiation on the waste package was high enough that  
25 you had to handle the packages remotely. That's a

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1 worker hazard thing because they get close to the  
2 packages. Offsite person, you're not, no one should  
3 be getting close to these packages, and so that really  
4 isn't an impact.

5 Now, the other part is there's a  
6 consideration of actions. What happens if there's a  
7 fire, and the fire has a potential to release certain  
8 materials into the atmosphere, and that can get to an  
9 offsite individual?

10 Now, having said that, there's something  
11 where once again the activated metals from commercial  
12 reactors, well, stainless steel doesn't burn. And so  
13 the impact of fire on some of the nuclides associated  
14 with activated metals is greatly reduced because it  
15 doesn't really burn.

16 Then there's offsite releases, and that's  
17 the eventually whatever you dispose of. There is  
18 radioactive decay that occurs, but there will be some  
19 releases from an underground facility over time.  
20 There are some mobile long-lived radionuclides in this  
21 waste, and eventually that could make it to a pathway  
22 that could be causing exposure to an offsite  
23 individual.

24 For those familiar with technetium-99,  
25 it's a very long-lived radionuclide in some of the

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1 waste, and it actually is very mobile in the  
2 underground system. And it is, there is a lot of  
3 retardation mechanisms that hold up radionuclides, a  
4 large number of radionuclides, from moving quickly  
5 with water underground. Technetium is not one of  
6 those radionuclides.

7 Plutonium is one that actually is, like  
8 one I call sticky. It sticks to the dirt, to the  
9 ground and doesn't transport as quickly underground.  
10 And so those are some of the things you account for in  
11 the offsite releases.

12 And then there's the intruder exposure,  
13 someone who actually -- and two scenarios were  
14 evaluated. One is an excavation scenario where we  
15 we're talking many years on the future and someone  
16 actually excavates for a home and actually doesn't  
17 realize that they're digging into a waste trench. and  
18 they have an exposure due to that.

19 There's also a drilling scenario. Someone  
20 puts in a drill and they're drilling down potentially  
21 for groundwater for a family well or some other type  
22 of well, and they intercept waste that way. I will  
23 say for the excavation scenario, essentially none of  
24 the waste streams were potentially suitable.

25 And so you'll see in our Reg Basis a

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1 requirement that we believe Part 61 should be revised,  
2 if it was to be revised, to require the depth at least  
3 a minimum of five meters below the ground surface and  
4 a 500-year intruder protection barrier.

5 Now, where that relates to the current  
6 regulation, Class C waste is required to be either  
7 five meters below the land surface or a 500-year  
8 intruder barrier. We're requiring both for greater-  
9 than-Class C waste, but the excavation scenario we  
10 looked at a little bit, and it was going to be an  
11 extremely difficult thing to comply with, say a 500  
12 millirem dose, which is the dose limit that was used  
13 when 61 was first developed for the intruder.

14 The next is the drilling scenario, and  
15 that is drilling through a container. Brings up less  
16 waste than excavation. And as I said, we did assume  
17 on average it was one package. If it was two  
18 packages, it would be twice the impact, and so you can  
19 get a sense of that.

20 In terms of going to the next slide, slide  
21 14, what's the, what was the perspective that we got  
22 in going through these analyses? As I said, most  
23 waste is potentially suitable for near surface  
24 disposal.

25 I think the key phrase there is

1 potentially suitable. There would need to be analysis  
2 done to look at the specific characteristics of the  
3 site you're at, how much water is infiltrating the  
4 land. There are many aspects. The characteristics of  
5 the geology.

6 And then, very importantly, the inventory.  
7 What exactly is being disposed of there? We evaluated  
8 each of these waste streams individually. There are  
9 17 of them. If they're all at one place, what does  
10 that mean? And so, as I said, most were potentially  
11 suitable, but an analysis would need to be done.

12 Secondly, the transuranic radionuclides  
13 presented issues. And there were concerns with  
14 release of plutonium from an operational fire that  
15 will get offsite. Consideration of fissile material  
16 during operations. The NRC has certain limits for  
17 when you have material like plutonium, how much you  
18 can have there and whether there's potential for an  
19 inadvertent criticality.

20 In terms of the intruder excavation  
21 scenario I mentioned, the excavation scenario we said  
22 if you go greater than five meters, the excavation  
23 scenario was not deeper than five meters, so that was  
24 removed. And then the intruder driller scenario,  
25 plutonium also, it was a primary aspect there.

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1           And if you remember back to my initial bar  
2 chart, you can see the transuranic radionuclides  
3 buried in these waste streams from greater than 10,000  
4 nanocuries per gram to 10, less than 10 nanocuries.  
5 So this is widespread. Once again, folks, you need to  
6 do the analysis, you know.

7           And most importantly, like I said, we rely  
8 primarily on the inventories in DOE's Environmental  
9 Impact Statement. Any application, any licensee would  
10 need to justify and explain and describe what  
11 inventory they would disposing. And that's an  
12 important part of the analysis that would be presented  
13 in any application for near surface disposal of  
14 greater-than-Class C waste.

15           With that, that gets through our technical  
16 analysis. I'll turn it back to Cardelia for  
17 describing how you could provide comments, written  
18 comments to the NRC.

19           MS. MAUPIN: Okay, thank you so much, Tim.  
20 Thank you for that great presentation.

21           On the next slide, you would see that it  
22 references our docket and where you can go, and other  
23 sites where you can go to get additional information  
24 on greater-than-Class C waste. In addition, I'm  
25 providing my contact information, along with Tim's and

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1 our colleague Gary Comfort, who have been working on  
2 this project intently.

3 The next slide is, talks about how to  
4 provide comments. And as I said earlier, all the  
5 information on this issue and nuclear regulation is  
6 not contained within the walls of NRC. That's why we  
7 do public meetings and stakeholder outreaches like  
8 we're doing today. So I strongly encourage you to  
9 submit all your comments in writing, in accordance  
10 with the direction in our July 22 Federal Register  
11 Notice.

12 And all of your written comments would be  
13 considered by us as well, you know, on this issue. So  
14 we provide a number of ways that you can submit your  
15 comments, and they're described here on this slide.  
16 You can even hand carry them if you would like to come  
17 visit us. Mail, email, fax. So we have a number of  
18 ways that you can submit your information.

19 But when you submit your information, as  
20 we'll turn to the next slide, please make sure that  
21 when you're submitting your comments, that you include  
22 the docket ID there, NRC-2017-0081 on all of your  
23 correspondence. And once again, I would like to  
24 emphasize that our comment period ends on September  
25 20. And with that, I think we can open it up for

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1 questions.

2 MS. LOPAS: All right, everybody, this is  
3 Sarah Lopas again. I'm going to facilitate us through  
4 the questions. So, a couple ways that you can ask  
5 your questions. And I already do have some comments  
6 and questions submitted by other webinars.

7 So I'll start by reading those, but if you  
8 want to ask a question and get on the phone line,  
9 you're just going to press star 1, and our operator's  
10 name is Lorraine, and Lorraine's going to get some  
11 info from you and she'll open up the bridge line for  
12 you so you can ask a question that way.

13 So go ahead and press star 1. I'm sure  
14 you've already been through this drill a bunch of  
15 times with NRC, star 1 to ask a question on the phone,  
16 or just go ahead and type a question on the webinar.  
17 I will say that if your question is really super duper  
18 long on the webinar, you might just want to call it  
19 in, because it gets tough for me to follow it on this  
20 webinar.

21 And I do want to point out that this call  
22 is being transcribed by a court reporter. So again,  
23 these are formal comments on the docket, but we wanted  
24 to make sure that we got a good record of today's  
25 call. So please, start by introducing yourself. And

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1 the same thing with the NRC staff, just when you start  
2 to answer a question just introduce yourself. And  
3 then speak clearly so our court reporter can get it.

4 So while I wait for folks to go ahead and  
5 get their questions on the line by pressing star 1,  
6 I'll start with my first question. And I think maybe  
7 Tim would answer this one, maybe. Tim was talking,  
8 you were talking about that pie chart, it said,  
9 Question on the, I guess this pie chart, are both  
10 existing and potential GTCC in the pie chart included  
11 in that 12,000 cubic liters total?

12 MR. MCCARTIN: Yes.

13 MS. LOPAS: Okay.

14 MR. MCCARTIN: Yes, the 12,000 includes  
15 both existing and potential.

16 MS. LOPAS: Okay.

17 MR. MCCARTIN: And the percentages in the  
18 pie chart are a percentage of that overall total,  
19 which is approximately 12,000 if you actually do the  
20 math. And I won't try to do it in my head, it's not  
21 quite 12,000 but --

22 MS. LOPAS: Right.

23 MR. MCCARTIN: Yeah.

24 MS. LOPAS: Okay, excellent. And I just  
25 want to remind folks it's not the handraising function

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1 that you're pressing here on the webinar, it's the  
2 question function. So I can't do anything with the  
3 handraising, so you have to type your question in. I  
4 just want to make that clear on the webinar. Or press  
5 star 1.

6 So I want to go through this next comment  
7 here on the webinar. It says, this is from  
8 Pennsylvania, from Rich Janati in Pennsylvania. It  
9 would be highly desirable for the NRC to extend the  
10 public comment period. So just note that.

11 And then the next question I have here is  
12 a little bit of a long one, so I'm going to try to  
13 read it. It's from Jeff Burrright. The DOE and NRC  
14 seem to be building off of each other's efforts on  
15 this issue, given that the NRC Regulatory Basis uses  
16 the GTCC EIS and considers DOE's GTCC-like waste.

17 How might this basis be affected by the  
18 new high level waste definition interpretation by DOE,  
19 which could result in a larger volume of GTCC-like  
20 waste than was analyzed in the EIS?

21 For example, the high level blasts coming  
22 from the Hanford waste treatment plant may be GTCC-  
23 like instead of high level waste. Plus, the cesium  
24 strontium capsules at Hanford, cesium ionic stage  
25 columns associated with the TSCR system and the German

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1 logs at Hanford.

2 MR. MCCARTIN: Okay, yes, this is Tim  
3 McCartin. And I would maintain that our Reg Basis  
4 has been developed in a way that's independent of any  
5 potential change of definition. And by that I mean  
6 what we are trying to say in the Reg Basis is that  
7 there's a number of things that are important.

8 But whatever application for near surface  
9 disposal is submitted will have to describe the  
10 inventory that they're going to dispose of and the  
11 site characteristics of whatever, and facility design  
12 they have and how that would comply with the  
13 regulations.

14 And so I will say let's, for sake of  
15 discussion, let's say there was a change in the  
16 definition and there was another 4,000 cubic meters of  
17 potential GTCC or GTCC-like that could be considered.  
18 I would say, well, it could be considered. But as we  
19 did in our Reg Basis, when you analyze it, it may be  
20 allowable, it may not be.

21 You're going to have to, any site will  
22 have to analyze everything they're receiving. And  
23 without knowing exactly waste form and the inventory,  
24 we can't say whether something is potentially suitable  
25 or not. But you can see the kinds of analysis that

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1 would need to be done to demonstrate that it's safe.

2 And I think that -- our Reg Basis puts  
3 forward an approach for analyzing waste streams that  
4 isn't dependent on a particular definition, if that's  
5 helpful.

6 MS. LOPAS: I want to, we have a number of  
7 questions on the webinar, but Lorraine, I wanted to  
8 check on the phone. Did anybody press star 1?  
9 Lorraine, are you there?

10 We may have a missing operator. Lorraine,  
11 are you on the line or any operator?

12 OPERATOR: Can you hear me?

13 MS. LOPAS: Yes, we can now, yeah.

14 OPERATOR: Okay, I'm sorry, my bad, I was  
15 here. We do have questions in the queue.

16 MS. LOPAS: Okay, great, go ahead, we'll  
17 take those.

18 OPERATOR: Barbara Warren, your line is  
19 open.

20 MS. WARREN: Oh, okay, good afternoon. My  
21 name's Barbara Warren, and I want to, I was trying to  
22 follow that last description, but I'm sort of missing  
23 it. Are you applying a siting criteria and  
24 regulations to this disposal facility design or not?

25 MR. MCCARTIN: Yes, this is Tim McCartin

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1 again. Well, currently, there are dose limits for the  
2 offsite person. There was a 500 millirem dose limit  
3 for, used for analyzing the protection for the  
4 intruders. And what I'm suggesting, that's how we  
5 analyze the hazards.

6 Now, in addition there are other things  
7 like operational accidents, handling accidents that  
8 would have to meet the dose limits for worker safety,  
9 offsite exposure. So there's a variety of things, and  
10 --

11 MS. WARREN: No, I'm talking about things  
12 just pertaining to the location of the site. For  
13 example, over an aquifer, a drinking water aquifer.  
14 Or you know, a situation where you have a hillside  
15 where there's no stability for the ground that you  
16 would be putting the landfill into. Things like that.

17 MR. MCCARTIN: Okay, let me, Dave Esh will  
18 talk to some of the requirements that are currently in  
19 Part 61 for land disposal that I think you're  
20 concerned with.

21 MS. WARREN: Yes, yes, that's what I'm  
22 concerned with.

23 MR. ESH: Yeah, I think we better  
24 understand your question now. It's a good question.  
25 All the siting requirements that are in 10 CFR Part 61

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1 would still also apply to greater-than-Class C waste  
2 disposal. And those include things like, that you  
3 were just talking about. Like there's a requirement  
4 that a site can't be in an area of high geotechnical  
5 or geomorphic instability.

6 That'd be things like erosion and  
7 landsliding and deformations. Or in areas with high  
8 seismicity or volcanism. And then there's a bunch of  
9 criteria associated with water. Some of those are  
10 exclusionary type criteria, and then some of those  
11 things that must apply for a disposal site.

12 So for instance, you can't dispose of  
13 waste in the zone of water table fluctuations, for  
14 instance, just as an example. So all of those  
15 criteria would also apply for GTCC waste disposal.

16 MS. WARREN: Okay, thank you.

17 MR. ESH: Yup.

18 MS. LOPAS: All right, Lorraine, who do we  
19 have next up on the phone?

20 OPERATOR: Our next question comes from  
21 John Greeves. Your line is open.

22 MR. GREEVES: Yes, this is John Greeves.  
23 Take it back to slide 3. Can you hear me?

24 MS. LOPAS: Yup, we can.

25 MR. GREEVES: Okay. On slide 3, yeah.

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1 MS. LOPAS: And this is, is this the Part  
2 61 low level waste disposal slide with the circle?

3 MR. GREEVES: Yes.

4 MS. LOPAS: Okay.

5 MR. GREEVES: And this relates to the  
6 definition of low level waste. I'm having trouble  
7 understanding why you show transuranic inside and  
8 outside the waste classification. As you stated and  
9 you're aware, the Amendments Act wiped out the  
10 exclusion of TRU.

11 My understanding, legislation trumps any  
12 legislation. And the question is why not just conform  
13 to the Amendments Act and simply basically conform  
14 with the Amendments Act? I'm having trouble why you  
15 were, you know, I don't know what you're doing, but it  
16 doesn't sound like you're conforming with the  
17 Amendments Act. Do you understand the question?

18 MS. MAUPIN: I absolutely, John,  
19 understand your question. But the problem is, John,  
20 that the regulations in Part 61 were never revised to  
21 put transuranic waste into the definition of low level  
22 radioactive waste that is described in Part 61. We  
23 have, we're still hanging on to the Low Level Waste  
24 Policy Act of 1980 definition.

25 So one of the things that the Commission

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1 has charged us to do is to no longer exclude  
2 transuranic waste from the definition of low level  
3 radioactive waste. Basically, you are absolutely  
4 right, we need to update our regulations to conform  
5 with the most recent law that was passed in 1985.

6 MR. GREEVES: I don't think you actually  
7 have a choice. And it's coming across like you're  
8 weighing whether you should follow --

9 MS. MAUPIN: If that's what you heard, I  
10 do apologize, but that was not the message I was  
11 trying to articulate. What I was saying, we're behind  
12 the times. We need to update our regulations to be in  
13 time with the last law. And that's why I just, I'm  
14 sorry the diagram was confusing.

15 But, and one other thing is that I did it,  
16 that we did it that way because currently there are  
17 some levels of transuranic radionuclides that are in  
18 our table, you know, in Part 61.

19 But this overall concept of transuranic  
20 waste needs to be updated in our definitions in Part  
21 61.2 to clearly conform with the Low Level Waste  
22 Policy Amendments Act of 1985. You are right, we  
23 should update it, and that's what we are, part of this  
24 effort. I hope that helps.

25 MR. GREEVES: Cardelia, your statement is

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1 very clear, the written product is not. So I'm glad  
2 to hear your answer, and I look forward to  
3 memorializing that. Thank you very much.

4 MS. MAUPIN: Thank you.

5 MS. LOPAS: Okay. Just a reminder to  
6 press star 1. And I will say do the quick learnings.  
7 I'm getting some feedback that somebody has pressed  
8 star 1 multiple times. So maybe we might have many  
9 people on the line. How many folks do we have on the  
10 line waiting to ask a question, Lorraine? Can I ask  
11 that?

12 OPERATOR: We actually three.

13 MS. LOPAS: Okay.

14 OPERATOR: But I called out to their line  
15 and they're not responding. But I actually have one  
16 person, Diane D'Arrigo. Her line is open.

17 MS. LOPAS: Okay.

18 MS. D'ARRIGO: Hi. So I am following --  
19 the concentrations in the 10 CFR 61.55 tables have  
20 transuranics in them, transuranics with half-lives  
21 longer than five years. The transuranic  
22 concentrations are already embedded in the Class A, B  
23 and C, well, actually A and C.

24 So I don't really get why you're saying  
25 that you don't have to comply with those. Do you

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1 really think that Congress knew what it was doing if  
2 it was adjusting concentrations for plutonium isotopes  
3 and transuranics?

4 MR. MCCARTIN: Well --

5 MS. D'ARRIGO: The problem that has been  
6 -- and I'll just say one more thing about -- as  
7 someone who has been tracking this since 1980, the  
8 public interest groups, including the Sierra Club,  
9 have a position calling for redefining low level  
10 waste, or waste that goes into 10 CFR 61 facilities to  
11 not be hazardous longer than the institutional control  
12 period. And the institutional control period is 100  
13 years.

14 So the analyses that are being done that  
15 allow for longer lasting waste to go into these  
16 facilities at higher and higher concentrations are  
17 putting the public at danger. And I just strongly  
18 oppose it.

19 And I would like to -- I mean, we've been  
20 fighting this issue with the NRC for a long time with  
21 the depleting uranium issue. And we've got a similar  
22 situation with really long lasting radionuclides that  
23 you're saying are going to go into still what are  
24 considered unlined soil trenches legally. That's one  
25 comment on that.

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1 MR. MCCARTIN: Well, one quick thing I  
2 think that might have been misunderstood. There is no  
3 suggestion that we are going to change the  
4 concentration limits in the tables in Part 61.

5 So the fact that greater than Class C, if  
6 you're over 100 nanocuries per gram, you're greater  
7 than Class C. And so despite the definition, you  
8 still now would have to comply with whatever approach  
9 is taken for the nearest disposal of greater than  
10 Class C.

11 And as you saw in our analysis --

12 MS. D'ARRIGO: How does your analysis  
13 comply with an approach? I don't understand. Could  
14 you describe that?

15 MR. MCCARTIN: Well, for our reg basis --

16 MS. D'ARRIGO: Yes.

17 MR. MCCARTIN: -- we have identified that  
18 certain concentrations, the two waste streams that we  
19 did not find potentially suitable were ones that were  
20 over 10,000 nanocuries per gram.

21 The other ones -- regardless of how  
22 transuranic waste is defined, once your above Class C,  
23 which is 100 nanocuries per gram, you are now into  
24 whatever approach we end up with for evaluating the  
25 safety of greater than Class C disposal.

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1           And as I mentioned early on, there were  
2 three alternatives that were considered. One would be  
3 no action. And, currently, Part 61 allows someone to  
4 come in and ask for the Commission to approve it on a  
5 case-by-case basis.

6           So just the other was we might develop  
7 guidance or actually change the rule. Now in the  
8 right basis, we have, and it's preliminary, we're  
9 waiting for -- well, we're seeking comment, but as I  
10 noted there would require greater in Class C to be no  
11 less than 5 meters below the surface and a 500 year  
12 intruder barrier.

13           The analysis would still have to show that  
14 it would meet a 500 millirem dose for the intruder.  
15 The offsite exposure -- there's a lot of other things.  
16 Dave identified other aspects of Part 61 that all come  
17 into play.

18           So, you know, I wouldn't want -- I think  
19 you were thinking it would change the definition of  
20 transuranic waste, that it would automatically be  
21 allowed. And no, all the -- once you're above 100  
22 nanocuries per gram for the transuranics, you are in  
23 the greater than Class C. And the analysis and the  
24 evaluations would need to be done to show that it is  
25 safe. That's what I meant by the process.

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1 MS. D'ARRIGO: If it's already requiring  
2 a case-by-case analysis, then what you're wanting to  
3 do now is make it more generic. I mean, you already  
4 can put greater than C into these facilities if you do  
5 the analysis on a case-by-case basis. It's already  
6 being --

7 MR. MCCARTIN: The Commission can approve  
8 that, yes, on a case -- yes, and that's why that's one  
9 of the alternatives. We don't have to change  
10 anything. We can still do this on a case-by-case.

11 Now some might argue that from a  
12 regulatory stability and clarification standpoint, is  
13 it better that we actually change the rule and say  
14 these are the things that will be required for any  
15 greater than Class C near surface disposal?

16 That's why we're out for public comment.  
17 That's why these different alternatives exist. We're  
18 interested in, like I said, it's preliminary. It's  
19 giving comment and --

20 MS. LOPAS: Great. I'm going to -- since  
21 we've gone through three folks on the phone, I'm going  
22 to go through -- because we've have a number of  
23 questions on the webinar. So I'm going to read  
24 through a couple of the questions on the webinar.

25 The first one is from Melanie Snyder and

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1 it asks are all the GTCC activated metals stainless  
2 steel?

3 MR. MCCARTIN: In terms for commercial  
4 reactors, the vast, vast majority is stainless steel.  
5 And I have to go back and check. There is a little  
6 activated metals associated with the West Valley  
7 Demonstration Project. And I'm not certain it is  
8 stainless steel, but it obviously is metal.

9 We did not account for it being stainless  
10 steel in our analysis. But obviously that's something  
11 if someone had more information on that particular  
12 waste stream, it could be accounted for. But for the  
13 reactors -- there's two parts to be aware of for the  
14 activated metals.

15 There is surface contamination, and  
16 there's contamination that goes throughout the metal.  
17 For the reduced source term, it's the portion that's  
18 throughout the metal because that requires the metal  
19 to completely corrode. There is some limited surface  
20 contamination. And that was available from the  
21 beginning for release but.

22 MS. LOPAS: Okay. All right. The next  
23 question we have here is a process question. This is  
24 from Phil Klevorick. What will be the process and  
25 possible timeline after the close of the public

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1 comment period on September 20?

2 MS. MAUPIN: After we receive the  
3 comments, generally we will bin the comments, sort the  
4 comments and then look at developing responses to  
5 those comments and to see how we need to, you know,  
6 re-evaluate the Draft Regulatory Basis and make  
7 changes to it.

8 As a number of people have alluded to, the  
9 Draft Regulatory Basis has not received a review and  
10 approval by the Commission so it's considered  
11 preliminary. And so in terms of process, we would  
12 also have to consider what the Commission would like  
13 us to do.

14 MS. LOPAS: Okay. And so for folks on the  
15 phone, press star 1. I know those you that have  
16 pressed star 1 just hang tight for a minute more. I'm  
17 going to go one more question here on the webinar.  
18 But we'll get to you on the phone. I promise.

19 So here's the next question on the  
20 webinar. It's from Larry Camper. Given the direction  
21 in SECY-15-0094 that if the staff determines that some  
22 or all of the GTCC waste is potentially suitable for  
23 near surface disposal, the staff should proceed with  
24 rulemaking.

25 In view of the findings of the analysis,

1 why did the staff not proceed with the rulemaking  
2 rather than no recommendation?

3 MR. MCCARTIN: This is the first step, the  
4 reg basis.

5 MS. LOPAS: Yes.

6 MR. MCCARTIN: A draft reg basis is the  
7 first step in the rulemaking path. And so --

8 MS. HOLAHAN: This is Trish. And it gets  
9 into the cost analysis of the various options so.

10 MS. LOPAS: All right. So star 1 if folks  
11 want to make a comment on the phone. Lorraine, do you  
12 have folks that you're in touch with that want to make  
13 a comment on the phone?

14 OPERATOR: Yes. Karen Hadden, your line  
15 is open.

16 MS. HADDEN: Hi, can you hear?

17 MS. LOPAS: Yes, we can.

18 MS. HADDEN: Hi. Okay. This is Karen  
19 Hadden. I'm in Austin, Texas, and very concerned  
20 because Texas is, in fact, being targeted for the  
21 final disposal of the entire inventory of greater than  
22 Class B waste and greater than Class C in transuranic  
23 waste.

24 This is clear from reading the  
25 environmental assessment that followed the

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1 Environmental Impact Statement. And what I learned is  
2 that the curies, the 160 million curies, would be more  
3 than 28 times what the pit is licensed for at WCS.  
4 It's 41 times the curies of the adjacent contact waste  
5 facility.

6 This is a vast increase. And somehow it's  
7 expected that our state agency will just wave a wand  
8 and say that that's okay. We can just do a license  
9 amendment for 28 times more than it's licensed for.

10 Our governor is opposing this, much to his  
11 credit. He opposes an increase in the amount of  
12 concentration or radioactivity authorized for disposal  
13 in Andrews County.

14 The canisters would weigh 100,000 pounds  
15 each and would be 7 units deep in the federal waste  
16 facility starting from 120 feet deep. This is  
17 basically shallow burial where the Environmental  
18 Impact Statement specifically says on (i)(6) in the  
19 introduction that this waste is generally not  
20 acceptable for near surface disposal and for which the  
21 waste form of disposal methods must be different and  
22 in general more stringent than those of Class C.

23 So we're very, very concerned that this is  
24 not adequate. This waste should go into a deep  
25 geologic repository, not any shallow waste burial

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1 anywhere. And I'd like for you to explain how it got  
2 changed from even considering to five meters deep  
3 because the environmental assessment says one big  
4 concern is volatilizing of radionuclides where they  
5 could come up through the cover on top of the site and  
6 get into the air and therefore the land, water and air  
7 could all become contaminated.

8 How is it that 5 meters deep can all of a  
9 sudden be considered viable when it started out being  
10 not acceptable for near surface disposal?

11 MR. MCCARTIN: Well, you raise a number of  
12 issues there. I will say first we did our analysis  
13 with no particular site in mind. We looked at a range  
14 of conditions a range of inventories, and we did the  
15 evaluation.

16 At the NRC, we are not promotional of any  
17 particular application. We review an application if  
18 someone wants to submit an application and review it  
19 against our safety requirements.

20 And if a particular design site inventory  
21 can meet the safety requirements, that is what our  
22 review is about. I understand your concerns. And I  
23 think all aspects of the releases and what could  
24 potentially happen at a particular disposal site would  
25 need to be evaluated.

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1           What we try to put forward in our reg  
2 basis, and we certainly would appreciate any comments,  
3 is have we missed certain things that should be done  
4 in terms of safety requirements? Are there any  
5 recommendations that people have that feel that are  
6 needed to ensure safety, we are certainly happy to  
7 hear that.

8           MS. HADDEN: So thank you for that answer.  
9 I want to point out in terms of safety that this waste  
10 would be going into disposal in an area that is prone  
11 to earthquakes. There was an earthquake, a 5  
12 magnitude earthquake, 19 miles away and even closer  
13 epicenters for lesser earthquakes on the Richter  
14 Scale. There's a lot of them.

15           And there seems to be no way that we could  
16 monitor what was happening underground. How would we  
17 even know if something was banging around and started  
18 to release radiation? How are we going to see? How  
19 are we going to know what's going on?

20           I think this is a horrible plan, this  
21 reclassifying waste. I think it sneaks in waste that  
22 should not be coming to Texas. And we're going to  
23 fight really hard to prevent this reclassification  
24 from happening. It doesn't make sense, and it will  
25 create a disaster scenario.

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1 MS. LOPAS: Thank you, Karen. I hope that  
2 you submit those comments in writing and maybe you'll  
3 see our folks at the meeting next week down in your  
4 neck of the woods.

5 MS. HADDEN: We'll be there.

6 MS. LOPAS: Excellent. Okay. Lorraine,  
7 do we have another person on the phone?

8 OPERATOR: Our next question comes from  
9 Tom (Smitty) Smith. Your line is open.

10 MR. SMITH: Hi. My name is Tom Smith or  
11 I'm better known as Smitty. And I'm representing  
12 public citizen. When this was first discussed, the  
13 belief was it was going to go to repository.

14 And most recently, these wastes were  
15 target at WIPP. Although there was an unfortunate and  
16 preventable accident at WIPP, that site is now open  
17 again and accepting waste.

18 What's wrong with WIPP and why is that no  
19 longer being considered? And kind of along with that  
20 is the only reason we're looking at it is because the  
21 Commission under Rick Perry decided to send you all a  
22 letter? Is that what this is all really about,  
23 because Secretary Perry, when he was governor was  
24 trying to benefit a donor?

25 MR. MCCARTIN: Well, a couple things. Let

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1 me clarify that WIPP is for defense related waste, and  
2 this is specifically not defense-related waste. And  
3 so, you know, this really isn't. You know, and I  
4 guess that could change, and it could go to WIPP if it  
5 changed the law. But currently that would not be the  
6 case.

7 I can say in terms of the Commission asked  
8 us to look at this. And we have followed that  
9 direction, and we put this out for public comment. We  
10 believe some of this waste is potentially suitable.

11 However, as Cardelia mentioned, we are  
12 looking for public comment. We believe we've  
13 described how we analyze things, how we've thought  
14 about this problem and why we think it's potentially  
15 suitable. And we're waiting to get comments.

16 But the Commission has requested us to  
17 look at this, and we are looking at it. I think,  
18 certainly, there was the letter to Texas that came  
19 into the Commission and was a part of that decision.  
20 It wasn't the only part of that decision.

21 MS. MAUPIN: And if I could just jump  
22 here. If you have an opportunity and access to the  
23 internet, on DOE's site, there is that November the  
24 17<sup>th</sup> -- that 2017 report to Congress where they list  
25 various alternatives in terms of GTCC disposal. One

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1 of those is revising the law so it can go to WIPP.

2 So you might want to look at that report.  
3 It would either go to WIPP or a commercial low level  
4 radioactive waste facility. So there are a number of  
5 documents there on the DOE that could help you in  
6 terms of information.

7 MR. SMITH: Thank you very much.

8 MS. LOPAS: All right. Lorraine, how many  
9 folks do we have on the line waiting to ask a  
10 question?

11 OPERATOR: I currently have two questions  
12 on line. I've called out to their lines. They're not  
13 responding.

14 MS. LOPAS: Okay. All right. Well, we'll  
15 let them hang out there for longer. If you're on the  
16 phone, you can be up soon but press star 1 if you want  
17 to get us on the phone.

18 So we have a number of webinar questions.  
19 So let's just work through these for a little bit.

20 This one comes from Janet Schlueter. I  
21 might be pronouncing -- Schlueter. I apologize Janet.  
22 Janet Schlueter. What is the basis for the staff  
23 assumption that potential volumes of both categories  
24 exceed existing volumes? So this is from those  
25 slides, I guess, showing the -- Slides 10 and 11

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1 showing kind of the pie charts and the bar charts.

2 So the basis for staff assumption that  
3 potential volumes of both categories exceed existing  
4 volumes. What's the staff basis for saying that?

5 MR. MCCARTIN: The potential -- these are  
6 just the volumes in the Department of Energy's FEIS.  
7 And they gave volumes for a variety of waste streams,  
8 and they categorized them as, I think it's one and  
9 two.

10 And one was their existing facilities that  
11 are licensed. Two are potential ones. And it's just  
12 the volumes they gave in the FEIS. We didn't generate  
13 them. I can be a little more specific.

14 On some of the -- for example there's some  
15 potential molybdenum-99 for medical isotopes that  
16 could happen in the future. There's no decision on  
17 doing that. There's other things such as their  
18 decisions associated with the West Valley site, that  
19 decisions might be made with some of the Commission  
20 waste there that -- but no decisions have been made  
21 yet.

22 Those are some of the categories of the  
23 potential one in addition to the -- and I'll say it  
24 was on the order of 35 new reactors or so to be built  
25 in the future that applications are not presently

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1 there.

2 We accepted the Department of Energy's  
3 numbers. We did not second guess these estimates.  
4 But, you know, and it is what they turned out to be.

5 MR. ESH: Janet, this is David. It  
6 depends on the particular waste you might be looking  
7 at, too. So for instance, commercial reactors the  
8 existing is about twice as much as the potential that  
9 would come for commercial reactors.

10 So like what Tim said, depending on what  
11 you do with West Valley, that could generate a whole  
12 bunch. But it depends on the particular waste stream,  
13 how much is potential and how much is existing.

14 MS. MAUPIN: I would just jump in there  
15 and say if Janet, when she submits her comment, if you  
16 have better information, better data because I know  
17 that you represent the nuclear reactor arena, so if  
18 there is better information than what we have, please  
19 feel free to submit it as a part of your submission to  
20 our comments. We would greatly appreciate any  
21 clarifying information you could provide us.

22 MR. ESH: But I guess one thing I would  
23 like to point back, and it gets to a couple of the  
24 questions we've had. It was very deliberate that we  
25 said potentially suitable because there is uncertainty

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1 in the estimates of what exactly is the inventory for  
2 these waste streams. We are using primarily what deal  
3 was presented. What the volume is, how much volume  
4 might be disposed of at a particular site of what  
5 waste streams.

6 And so there are a variety of combinations  
7 that one could come up, some are going to be more  
8 difficult than others. And that's why we said  
9 potentially suitable. The key is whoever would submit  
10 an application, either to an Agreement State or to the  
11 NRC, they would need to, I think, have a defensible  
12 inventory of the peer accepting what the waste forms  
13 are and to support an evaluation of whether it's safe  
14 or not.

15 MS. LOPAS: Okay. I just want to remind  
16 NRC folks just introduce yourself before you chime in.

17 MS. MAUPIN: Okay.

18 MS. LOPAS: So that leads into our next  
19 question pretty well. So this is from Rich Janati  
20 from Pennsylvania again. How confident are you that  
21 80 percent of GTCC waste is suitable for near surface  
22 disposable and what is this conclusion based on?

23 Also you pointed out that 95 percent of  
24 the 80 percent GTCC that is suitable for near surface  
25 disposal can be regulated by the Agreement State.

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1 What's the 5 percent waste of the waste that is  
2 suitable for near surface disposal that cannot be  
3 regulated by the Agreement State?

4 MR. MCCARTIN: Okay. Right. And I think  
5 I answered some of that question. We have never said  
6 it's suitable, potentially suitable. And that was a  
7 very deliberate choice. And it depends. Site  
8 conditions are different. Inventory is how much of  
9 this?

10 And that's why we said 80 percent was  
11 potentially suitable. But that does not mean it is  
12 safe everywhere or -- in terms of the 5 percent, where  
13 that comes from there are certain limits on fissile  
14 plutonium that we have security requirements for the  
15 NRC, and it has to do with common defenses security.

16 And that's something that's reserved for  
17 the NRC. And so that 5 percent that isn't there, it  
18 has to do with a large amount of fissile material that  
19 trips the threshold for requiring some security  
20 requirements that are reserved for the NRC. And so  
21 that's what makes it problematic for that 5 percent.

22 MS. LOPAS: Okay. And that's good. That  
23 took care of the next question, asking that same  
24 question what's the 5 percent means so. And that was  
25 from Ben Wishert.

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1           The next question we have on the webinar,  
2           and just a reminder to press star 1. You don't have  
3           to type your questions into the webinar. You can  
4           speak on the phone. So star 1 or go ahead and type  
5           your question in.

6           The next question here we have is from  
7           Jeff Burrright. It says based on Figure B2 of the  
8           regulatory basis, so Figure B2, the regulatory basis  
9           document, it appears that GTCC disposal should only be  
10          safe if the intruder barrier is also built to  
11          withstand drilling equipment between 100 and 500  
12          years.

13          Is this part of the assumption behind the  
14          500 year barrier in the regulatory basis? The  
15          analysis does not provide a basis for expecting such  
16          a barrier to be feasible. What about uncertainty  
17          analysis for early barrier failure? So let me know if  
18          you need me to re-read that.

19          MR. ESH: Hi, Jeff. This is Dave Esh.  
20          Thanks for the questions. So, yes, you're  
21          interpreting that reasonably correctly. Because for  
22          some that 100 to 500 year time frame for many of the  
23          GTCC waste streams that we analyze, you do need to  
24          prevent something like a drilling for occurring.

25          And that's why Tim said if we changed our

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1 regulations, we would require the disposal depth and  
2 a robust intruder barrier, which might take the form  
3 of, you know, high strength reinforced concrete with  
4 a lot of rebar in it, something like that. But we  
5 usually don't get to that level of specificity in  
6 terms of what the barrier might be.

7 We would say what the barrier may need to  
8 achieve and then allow the licensee or applicant to  
9 come with up with how they believe they could design  
10 something to meet that requirement.

11 And then -- sorry, what was the second  
12 part of the question?

13 MS. LOPAS: Okay. So did you answer this  
14 part of the assumption behind the 500 year barrier?

15 MR. ESH: Yes.

16 MS. LOPAS: Okay. The analysis is often  
17 waiting or expecting the barrier to be feasible. What  
18 about uncertainty analysis in early barrier failure?

19 MR. ESH: Yes. So what those figures show  
20 is basically the uncertainty in if the barrier failed.  
21 So if you had a barrier that was 5 percent effective,  
22 then those curves would not start until 500 years or  
23 whenever you think the barrier is going to be fail.  
24 And so that kind of shows the uncertainty if the  
25 barrier doesn't work, what size of impact you would be

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1 looking at.

2 Now I would add that there's a lot that  
3 goes into that type of calculation. Many of those  
4 impacts to the driller are dominated by inhalation  
5 pathways. And so you're really concerned with how  
6 much of the material ends up in the air, how long is  
7 the person drilling, those sorts of things that go  
8 into the calculation.

9 If you have site specific information for  
10 those sorts of inputs that go into the calculation, it  
11 may be possible that you could justify that the  
12 impacts are not too large in that 100 to 500 year  
13 period. But as Tim has tried to stress, that's a very  
14 site specific thing when you're looking at these  
15 different engineered designs and different waste  
16 streams and different disposal sites. So that's what  
17 we think is the right thing to do for these  
18 situations.

19 MS. LOPAS: Okay. Let me get one more  
20 question here on the webinar and then we'll go back to  
21 the phones. It's star 1 or just hang tight if you  
22 pressed star 1 and you're on the line. We'll get to  
23 you.

24 So this is from Roger Seitz. And it's two  
25 questions. One is on Slide 12, it was stated that

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1 Part 61 approach was followed. However, Part 61  
2 classification tables included a factor of 10  
3 multiplier that increases the Class C limits by a  
4 factor of 10 to account for a variety of pessimistic  
5 assumptions built into intrusion scenarios.

6 It does not appear that a similar factor  
7 would be used in the technical analysis. Are you  
8 implying that limitations on GTCC receive more  
9 restrictive than Class B by not including the similar  
10 factor in this technical analysis.

11 MR. ESH: Thanks for the question, Roger.  
12 This is Dave Esh. We aren't implying that the  
13 requirements for GTCC would be more restrictive. But  
14 that factor of 10, a large part of the basis for it,  
15 was that the waste disposal facility would not be full  
16 of waste all at the waste class limit.

17 So for instance for a normal facility, we  
18 have a saying that only a small fraction of the waste  
19 would be Class C and a fraction would be at the Class  
20 C limits and a fraction would be at the Class A  
21 limits.

22 Basically, much of the waste would be  
23 under the class limits. For this analysis we were  
24 looking at if the waste was all at a certain value,  
25 for instance, waste in the barrel of a certain

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1 concentration, what would be the impact?

2 This did not consider other waste that  
3 runs off of it. And so it wouldn't be appropriate to  
4 add in that factor of 10 for this type of analysis  
5 because it was really looking at wasting under the  
6 limits as it was disposed in actuality whereas as the  
7 regularity limits were kind of what's the allowable  
8 limits for the different classes of waste.

9 MS. LOPAS: Okay. And then here's his  
10 second question, Roger Seitz's second question, and  
11 then we'll go to the phones. Also a mud pit was  
12 assumed for drilling in the impacts update NUREG  
13 supporting Part 51 from the mid-1980s.

14 It does not appear such a drilling  
15 approach was considered by the technical analysis.  
16 Mud pits are commonly used in a site specific analysis  
17 likely may be considered a drilling approach with  
18 intruder scenario. It seems that a mud pit should be  
19 considered in a technical analysis.

20 MR. ESH: Right. So you're correct. We  
21 didn't consider a mud pit because the doses associated  
22 with a mud pit are much lower because of the mud being  
23 wet and that plus, it's dispersible. But that there  
24 are many drilling technologies today that do not use  
25 a mud pit and the impacts are much larger.

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1           And so you asked if on a site specific  
2 basis you could argue that the drilling technology  
3 would be a mud pit. You should factor that into your  
4 analysis.

5           But for this regulatory analysis, it  
6 wouldn't be appropriate for us to ignore the much  
7 higher risk scenarios which are used in practice with  
8 some of the more modern drilling techniques.

9           MS. LOPAS: Okay. All right, star 1 to  
10 get a question on the phone. Lorraine, do we have any  
11 questions on the phone?

12           OPERATOR: Yes. The name was not  
13 recorded, but your line is open. You may go ahead.

14           MS. LOPAS: Hi. Is somebody on the line?  
15 You just need to introduce yourself. If you wanted to  
16 talk on the phone, now is your chance so. You did not  
17 record you name. All right. Lorraine, we might need  
18 to come back. Anybody else on the line?

19           OPERATOR: Karen Hadden, your line is  
20 open.

21           MS. HADDEN: Hi. I was glad to hear the  
22 discussion about the drilling equipment. The site  
23 that this would go to, and it's very clear from the  
24 environmental assessment that this is the site that's  
25 really being focused on.

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1           None of the others are really being  
2 considered at this point although many communities  
3 would be impacted by 33,000 truck shipments or 11,800  
4 rail shipments.

5           But the drilling would be a possibility  
6 because this is the heart of the Permian Basin, the  
7 largest producing oil fields in the country. It  
8 recently came up in the case about high level waste  
9 going to this site that there has been a failure to  
10 characterize over 600 abandoned wells that are already  
11 in existence in the region.

12           So there are multiple pathways by which  
13 radioactive materials could, in fact, migrate. And I  
14 don't think that there are too many barriers through  
15 which drilling could not be accomplished. So, again,  
16 I think there needs to be a full blown site specific  
17 Environmental Impact Statement for this to be an  
18 environmental assessment and adopting the generic  
19 Environmental Impact Statement is not enough.

20           There needs to be a full blown look at  
21 what would be the real impact of sending this stuff  
22 for shallow burial inappropriately near the Ogallala  
23 Aquifer, which lies under eight states. This is not  
24 a good idea, and it needs to be researched thoroughly.

25           MS. LOPAS:   Okay.   Thank you, Karen.

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1 Let's finish off some of these questions on the  
2 webinar and then we'll go back to the phones. So star  
3 1 on the phone. It sounds like you are prompted by a  
4 recording to record your name. Just keep that in mind  
5 when you press star 1.

6 So this next question on the webinar is  
7 from Ann Frisch. What kind of statistics will you use  
8 to estimate the potential for highway accidents given  
9 that there will likely be a lot of requests for  
10 parking this material in landfills? What amount of  
11 risk do you expect? Who will pay the costs? How many  
12 new staff will you need to assure public and  
13 environmental safety? Will first responders be ready  
14 when a shipment is made? Will the public be informed  
15 in advance?

16 MR. MCCARTIN: Well, the reg basis is for  
17 disposal. And certainly environmentally -- the  
18 Environmental Impact Statement could look at potential  
19 transportation accidents, et cetera. Certainly, the  
20 shipment of radioactive waste would have to follow  
21 requirements that are already in existence by the  
22 Department of Transportation and NRC's requirements so  
23 usually for the package, for the NRC. But that would  
24 be evaluated if a facility was going forward. This is  
25 a reg basis for the disposal facility.

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1 MS. LOPAS: Right. So you're saying some  
2 of those transportation impacts, Tim, would be  
3 evaluated for -- and he asked for a specific facility.  
4 And that's not what we're looking at right here,  
5 right?

6 MR. MCCARTIN: Yes.

7 MS. LOPAS: Right. Okay. The next  
8 question here is from Dan Shrum. It says question on  
9 the PA. Does a package of GTCC waste consider other  
10 waste Class A, B or C, being placed above the GTCC  
11 package or was just the GTCC package evaluated?

12 MR. MCCARTIN: Just the GTCC package.  
13 And, remember, once again, that's why we say  
14 potentially suitable. There are different ways to  
15 dispose of things. And what actually was the design  
16 of the facility would need to be looked at and the  
17 actual inventories for everything that's disposed of.

18 But given the very specific nature of  
19 greater than Class C waste, you know, we felt that it  
20 was appropriate that it probably be a particular  
21 disposal unit would be reserved for it. But, you  
22 know, certainly from a drilling thing, if you have one  
23 package or two packages, you're going to have twice as  
24 much waste and so it would be more difficult.

25 MR. ESH: This is Dave. If you're looking

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1 at co-disposal of GTCC and other waste, Dan, those  
2 other wastes would be much less concentrated than the  
3 GTCC. So, yes, they would have an additive effect for  
4 the impacts, but it would be probably be a small  
5 fractional additive effect for the impact so. But  
6 yes, a site specific analysis would have to consider  
7 all the waste in a column not just one type of waste.

8 MS. LOPAS: Right.

9 MR. ESH: Whatever the disposal plan is.

10 MS. LOPAS: And I think that answers Dan's  
11 follow-up question where he says what additional waste  
12 classifications would be acceptable to be placed next  
13 to or on top of GTCC? And it sounds like you guys  
14 emphatic that it's site specific.

15 MR. MCCARTIN: Given it's analyzed, it's  
16 certainly is potentially okay.

17 MR. ESH: Dan, this is Dave. The one  
18 thing we would consider is that the other waste have  
19 some of deleterious impact on the GTCC waste. For  
20 instance, if you needed to rely on a stainless  
21 container for the GTCC waste, would the other waste  
22 and characteristics impact the GTCC waste. But other  
23 than that, just like I described earlier, you just sum  
24 all the activity and the analysis and the scenario.

25 MS. LOPAS: Okay. All right. So I've got

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1 one more kind of multipart question here on the  
2 webinar. So submit your questions on the webinar if  
3 you have additional ones. And press star 1 if you  
4 want to get on the phone line and talk over the phone  
5 line.

6 So this question is from Gordon Edwards,  
7 who is from the Canadian Coalition for Nuclear  
8 Responsibility. So he asks what independent checking  
9 will be done to verify waste inventories? He sees  
10 three problems.

11 One, list of radionuclides is generally  
12 not complete. Two, activity levels can be  
13 underestimated by orders of magnitude using mass  
14 instead of actual measurement. And three, it's  
15 difficult to measure some radionuclides that are long  
16 lived lives, such as using carbon-14, a six thousand  
17 year half-life poses a long-term hazard.

18 So he's saying in part two of the  
19 question, I should have emphasized some radionuclides  
20 which are very difficult to detect because of much  
21 less penetrating radiation. No gamma. There is also  
22 potential for falsified documentation as well. So  
23 he's wondering about independent checking to verify  
24 waste inventories.

25 MR. MCCARTIN: Well, certainly any

1 application has to have support for their inventory.  
2 That would be reviewed by the regulator and is  
3 potentially inspectable. And there are limitations of  
4 what one can look at, but there is uncertainty there.  
5 It would need to be evaluated, just like any disposal  
6 site. That's true for Class A, B and C as well as  
7 other waste forms.

8 MS. LOPAS: Okay. All right. Lorraine,  
9 do we have any questions on the phone?

10 OPERATOR: Yes. Diane D'Arrigo, your line  
11 is open.

12 MS. D'ARRIGO: Thank you. I have two  
13 here. One is having to do with the doses. Under 10  
14 CFR 61, unless it's been changed, which I don't think  
15 it has. It's been considered changed. You're  
16 supposed to meet 40 CFR 190, which is 25 millirems per  
17 year.

18 And so I know you're doing the long range  
19 scenarios out to 500 and that seems to be a more  
20 limiting factor for some wastes going in. So I wanted  
21 to hear about the dose calculations and the public  
22 being allowed to be exposed to what levels from this  
23 material.

24 And then the other has to do with the  
25 economics. How much of this is being motivated by

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1 decommissioning of reactors in other large facilities  
2 and a need for a place for greater than C because it's  
3 taking longer to get a place for high level waste?

4 So is this something to enable materials  
5 to be moved in the absence of a high level repository?  
6 And then I have one more on transport.

7 MS. LOPAS: Okay. So do we want to tackle  
8 the first one regarding questions about doses --

9 MS. D'ARRIGO: Doses and then economics of  
10 decommissioning (simultaneous speaking).

11 MR. MCCARTIN: Well, let me raise the  
12 economics ones first. And I'll say -- this is Tim  
13 McCartin. As part of the working group, that never  
14 once came into any discussion for us.

15 The task we were asked was, is this  
16 material potentially suitable for disposal in the near  
17 surface? And that's the only thing we looked at,  
18 whether it's an economic advantage, whether it's  
19 potentially suitable and meeting the 500 year intruder  
20 barrier. And meeting all -- you might have to have a  
21 facility design that would be buried.

22 Our focus was on is it appropriate that  
23 this be considered for near surface disposal? And at  
24 least I'm not aware of at any time any type of  
25 economic where the nuclear industry was brought to us

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1 or anyone on the working group.

2 Now with respect to the dose -- well,  
3 okay, go ahead.

4 MS. D'ARRIGO: Okay. I'm sorry. No, go  
5 ahead, go ahead.

6 MR. MCCARTIN: With respect to the dose  
7 limit, certainly the 25 millirem dose limit for the  
8 offsite individual in Part 61 it's still every bit in  
9 play and what needs to be met. And maybe I should  
10 have this clear.

11 When I talk of a 500 millirem dose, that  
12 was for the intruder only protection and that is what  
13 was considered. In developing the classification  
14 scheme for Part 61, they looked at a 500 millirem dose  
15 to the intruder.

16 And so we would require the same level of  
17 protection for the intruder that was considered in  
18 Part 61 when it was developed. But the 25 is for the  
19 offsite individual. That would not change. There's  
20 no suggestion whatsoever.

21 And I guess you have a third one on  
22 transportation?

23 MS. D'ARRIGO: Well, it has to do with  
24 since this is much hotter waste than the low level  
25 waste that normally is moved, the A, B and C, would

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1 there be more notification of emergency responders  
2 along the route? Would there be -- there's that  
3 general thing.

4 And then throughout your description of  
5 this, you talk about analysis that will be done. But  
6 the analysis is not going to be done every time a  
7 shipment is made to a site. It's going to be made,  
8 I'm guessing on a generic basis.

9 And then you're going to generically,  
10 potentially, generically make this decision because  
11 right now people can, generators can, on a case-by-  
12 case basis do these analysis. It's just something  
13 that would be potentially too expensive to do as much  
14 under decommissioning.

15 So I'm going back to my first question  
16 there. But also the other thing is that this is much  
17 hotter and would there be more protection for  
18 communities along routes?

19 MR. MCCARTIN: Well, certainly there would  
20 be no changes to the transportation regulations,  
21 either Department of Transportation or NRC's package  
22 requirements and then the restrictions that are there  
23 for the dose that is within one meter of the package,  
24 et cetera.

25 And so would that possibly change a

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1 particular package design that could be used for parts  
2 of the -- some of the waste streams? I guess it's  
3 possible. We did not look into the particular aspects  
4 of transportation.

5 And that's also an important part that I  
6 think the analysis, I was talking for a facility,  
7 you're going to have to know how much you are going to  
8 put there and whether it's safe. And so I think there  
9 --

10 MS. D'ARRIGO: And when would you need to  
11 know that? Before or after you changed the  
12 regulation? I mean (simultaneous speaking).

13 MR. MCCARTIN: Well, you would have to  
14 know that to approve an application.

15 MS. D'ARRIGO: So then it would be, like,  
16 WCS was given a license for a certain amount of curies  
17 and radioactivity. And then they just go back and  
18 they get additional increases in what's allowed. So  
19 you would give an increase for now taking greater than  
20 C in transuranics and then if they needed more, they  
21 would just go back and get amendments to allow it.

22 MR. MCCARTIN: You're doing a lot of  
23 speculation there that I'm not -- I guess, I mean, we  
24 don't give people an open ended license. There would  
25 have to be both the inventory that you're going to

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1 dispose of, how you're going to dispose of it, the  
2 facility design, et cetera, needs to be evaluated.  
3 And could it be changed over time? It could be. But  
4 that's kind of a different process. Obviously people  
5 can file for an amendment to a license.

6 But my understanding is we've got to know  
7 what's going where and how is it going to be disposed  
8 of to determine whether it would be safe. And that  
9 would be the total of --

10 MS. D'ARRIGO: Why would you -- I guess  
11 the problem is when would you or the regulator on the  
12 Agreement State do that? Are you going to do that at  
13 the beginning of the changing this definition,  
14 changing these rules or is it going to be done each  
15 time greater than C is going to come to the sites?  
16 And how many times is that done before you say, well,  
17 just let it all go? I'm just trying to -- I mean, we  
18 as a public have to intervene every single time that  
19 we care about. So, you know, if it's done generically  
20 or if it's done on a case-by-case basis.

21 MR. MCCARTIN: Well, okay, if it gets to  
22 how might this be accomplished from a regulatory  
23 standpoint, currently we have the three alternatives  
24 that we're seeking comment on.

25 MS. D'ARRIGO: Mm-hmm.

1 MR. MCCARTIN: Ultimately, it will be a  
2 Commission decision as to how they want to go forward,  
3 if at all. And so that would -- you know, you're  
4 right if, you know, in the one case where we don't  
5 change the regulation, and we do it on a case-by-case  
6 basis.

7 We wait for someone to come in and say I  
8 would like to dispose of this amount of GTCC waste at  
9 this site with this design, and they give something to  
10 the Commission. Can I do that?

11 MS. D'ARRIGO: And that's the current way  
12 that it's done, right now.

13 MR. MCCARTIN: Correct.

14 MS. D'ARRIGO: That's the normal way.  
15 Okay.

16 MR. MCCARTIN: And I believe the first  
17 step of that would be for the staff to do an  
18 evaluation of whether it's appropriate for this amount  
19 of waste to go to this facility. And --

20 MS. D'ARRIGO: Yes.

21 MR. MCCARTIN: -- we would have to  
22 document our basis for saying either yes or no or yes  
23 with requirements. And, you know, I think at present  
24 the reg basis gives it some preliminary ideas of the  
25 types of things we would look at it.

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1           But therein the negative of that  
2 particular approach at a particular site, maybe there  
3 would be some other things that were more significant,  
4 and we would look at in greater detail. We don't know  
5 without an application.

6           And I guess I'm not willing to speculate,  
7 but we would have to develop an evaluation and a basis  
8 for that. And the public would certainly be kept  
9 informed of that. But --

10           MS. D'ARRIGO: Well, what it sounds to me  
11 like is going on here, and you know, correct me if I'm  
12 wrong, is that this process that we've just discussed  
13 is going to change, or would potentially change, if  
14 approved by the Commission and those steps would no  
15 longer be undertaken. It would --

16           MR. MCCARTIN: Well, I didn't mean to  
17 imply that. There is different ways that there could  
18 be a regulatory evaluation of the safety of greater  
19 than Class C disposal.

20           MS. D'ARRIGO: Okay.

21           MR. MCCARTIN: They might also say we want  
22 to develop a rule and go through a rulemaking.

23           MR. KOENICK: I think, this is Steve  
24 Koenick. I think, Tim, what you're trying to say is  
25 if we did proceed down rulemaking, would that replace

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1 the site specific case-by-case analysis? And that is  
2 not the case.

3 So whether we have rulemaking or we do  
4 site specific without rulemaking, the rulemaking would  
5 specify what the requirements are that the licensee  
6 would have to undergo. So it would add some formality  
7 to what that review process looks like.

8 It would not, by no means, would it  
9 replace a licensee coming in for this analysis. As  
10 Tim mentioned earlier, they still would have to do the  
11 site specific analysis, and they would look at the  
12 inventory.

13 So the hazard of the Draft Regulatory  
14 Basis defines what types of hazards we would be  
15 looking at and how that process would look like, but  
16 it would not replace that evaluation.

17 MS. D'ARRIGO: Then what's the advantage  
18 of it? The advantage of doing it if you're not going  
19 to reduce that regulatory burden?

20 MR. KOENICK: This is Steve again. The  
21 regulatory basis, if you add more formality, and you  
22 have more institutional documentation of what that  
23 process looks like, you codify what it looks like and  
24 what you are going to be evaluating as opposed to just  
25 doing it on a case-by-case basis. So certain aspects

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1 of these hazards would have been well vetted in a  
2 public forum as to what those considerations are. But  
3 it doesn't replace the reviews.

4 MS. HOLAHAN: And this is Trish Holahan.  
5 I'm just going to clarify. It's not the Reg Basis,  
6 but if we proceeded with rulemaking, that would codify  
7 the, you know, requirements, but we still do a  
8 case-by-case basis for each applicant that comes in.

9 MR. SCHOFER: And finally, this is Fred  
10 Schofer. In the Reg Basis Section 7, we attempted to  
11 outline each of the pros and cons of each alternative  
12 and the process that the licensee would have to go  
13 through.

14 MS. HOLAHAN: Yes.

15 MS. D'ARRIGO: Well, and isn't it true  
16 though that it would be the Agreement State that would  
17 be doing what you're saying would be done, not the  
18 NRC?

19 MR. SCHOFER: Actually, we considered it  
20 both ways, whether an Agreement State would do the  
21 licensing for the NRC.

22 MS. D'ARRIGO: Okay, I didn't get that  
23 far, I guess.

24 MS. LOPAS: So, if you have comments on  
25 that, Diane, that would be an important thing to

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1 submit comments on from the pros and cons of whether  
2 a standard Agreement States should do this as well.

3 I have two questions here. I have one  
4 follow-up here on the webinar. So star 1 if you have  
5 more questions on the phone, but I have a follow-up  
6 from the inventory question on two checks from Gordon  
7 Edwards.

8 So I think the question is, you know, he  
9 did not like your -- he did not find your first answer  
10 reassuring, Tim.

11 So he says here, does the NRC -- does this  
12 mean the NRC does no independent measuring of  
13 radionuclide inventory? Do they take the declared  
14 inventory on space?

15 MR. ESH: Hi, Gordon, this is Dave Esh.  
16 All of our existing facilities are in Agreement  
17 States. And so the Agreement States fulfill that  
18 function. But I was recently on -- well, not exactly  
19 recently, but it seems like recently on two of what we  
20 call our IMPEP reviews, where we review through our  
21 Agreement State programs, one in the state of  
22 Washington and one in the state of Texas.

23 And when they receive waste, they do  
24 independent inspections of the waste receipt process,  
25 which involves -- you know, there's waste manifests

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1 that the generators have to put down what's in the  
2 waste that they're sending. And then the disposal  
3 facility has their own requirements about acceptance  
4 of the waste.

5 And there are exclusionary requirements  
6 like, you know, if barrel's leaking and that sort of  
7 thing. They're pretty obvious, but then, the  
8 questions you were asking about how do you determine  
9 actually what inventory is in there? That's a more  
10 challenging question, especially, what the hard to  
11 detects.

12 It is something that we've worked on with  
13 allowing people to use scaling factors for certain  
14 types of ways, but they have to justify their methods  
15 that they come up with for use of those scaling  
16 factors.

17 For some waste disposal programs, like I  
18 know within the Department of Energy, when they do  
19 waste acceptance from generators, they'll do some  
20 independent measurement and verification of the waste.  
21 And in some cases, like for waste that was sent to  
22 WIPP, when they were too uncertain about what was in  
23 the barrel, they went through a process of opening the  
24 barrels and characterizing them and determining  
25 exactly what was there.

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1           So the high-level answer is, yes, you have  
2           to be confident in the inventory that goes in the  
3           facility, and there's a variety of different methods  
4           and approaches you could use to develop that  
5           confidence. And then the assessment ultimately should  
6           reflect the uncertainty in that inventory because in  
7           some cases, the uncertainty in the inventory may not  
8           be important. In other cases, it may be very  
9           important.

10           So I hope that better answers your  
11           question about the inventory. For GTCC waste, because  
12           it is more concentrated, and there could be high  
13           concentrations of transuranics, the approaches to  
14           characterize that waste and accept it may need to be  
15           more rigorous.

16           But that would either come out in say if  
17           we developed guidance, or if we did a rulemaking, we  
18           would look at whether we need more robust criteria  
19           associated with waste acceptance and characterization.

20           MS. LOPAS: Okay. Let me get to this last  
21           question on the webinar. Star one, for folks on the  
22           phone, to get some questions in on the phone.

23           The conversation -- this is from Jeff  
24           Burrigh. He says, the conversation today seems to  
25           stress the need for site-specific analysis, i.e., a

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1 model rather than prescriptive end states for disposal  
2 based on waste longevity or concentration.

3 Am I understanding correctly that big  
4 picture when it comes to GTCC disposal model rule? If  
5 you give up authority to the states for making a GTCC  
6 decision, how will you verify that the models used are  
7 good enough? Will NRC review a state's decision?

8 MR. MCCARTIN: Well, regardless of any  
9 model used, there has to be a basis for the validity  
10 of the models and the inputs, et cetera. And so,  
11 you're correct in the assumption -- and the analysis  
12 has to be done. But it also has to be done right.  
13 And that's part of the review process in terms of --  
14 and this is where, I mean, if we're the regulator, we  
15 would certainly do that review.

16 As Dave Esh talked about, there's an  
17 impact process where we do go in and look at how  
18 Agreement States are operating, and that's a way for  
19 us to look at their process. We would not -- as best  
20 I understand it, but I leave it for others, I mean, we  
21 don't go in and do a second regulatory review.

22 But if their program is appropriate, then  
23 there is an understanding that the right decisions are  
24 made.

25 MR. ESH: This is Dave. I'll add to that

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1 because I don't know if Tim's done an impact in a  
2 while. Whenever we do those, we'll do vertical and  
3 horizontal slices of the technical work that the state  
4 has done. So we may ask to see their -- what they  
5 reviewed and how they reviewed it, what guidance they  
6 used, if they were looking at a particular model, you  
7 know, computer files. We may look at those computer  
8 files. We may look at their spreadsheets that they  
9 used. All of that goes into the technical -- our  
10 technical assessment of their licensing review.

11 And yeah, it's not as rigorous as if we  
12 did the licensing review ourselves because this is a  
13 shorter-term activity, it's trying to assess the  
14 program. But it isn't a matter of that we're just  
15 putting checks on a checklist and saying, okay, you  
16 see that they have a document, and we don't look at  
17 the details in the document. We do to the amount that  
18 we can in the scope of one of those reviews. We do  
19 review their documents and how they made their  
20 determination that the materials that submitted to  
21 them were satisfactory or not satisfactory.

22 MS. LOPAS: All right. I'm going to check  
23 in on the phone. Lorraine, do we have any questions  
24 on the phone?

25 OPERATOR: There is some question. The

1 name was not -- it was not recorded. But your line is  
2 open.

3 MS. LOPAS: Hi, is somebody on the phone?

4 All right, you may be on mute. Give it a  
5 whirl. Maybe put yourself on mute one more time.

6 All right, Lorraine, you might have to  
7 delete that one.

8 OPERATOR: All right, I'll go ahead and  
9 clear it.

10 MS. LOPAS: Okay. So R1, if you want to  
11 ask a question, I have one more question here in the  
12 webinar. So this question from is Karen Hadden again.

13 She says, please discuss what containers  
14 would be used for shipping GTCC and GTCC-like waste?  
15 And what doses to the public would be from routine  
16 shipments and from stops during and from truck and  
17 rail transport?

18 MR. MCCARTIN: Well, it's Tim McCartin.  
19 I'm not a transportation expert. And this Reg Basis  
20 is about disposal, but there are approved containers  
21 that limit the exposure that would be received by any  
22 member of the public either while it's stopped in  
23 traffic or at any other particular stop and during  
24 transport.

25 We can get back to them if they want what

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1 the regulatory requirements are for the dose limits,  
2 but those requirements -- there are different packages  
3 out there up to and including packages that are used  
4 for spent nuclear fuel that keep doses to a very -- so  
5 there's not a -- I'm not aware of any constraint that  
6 a package isn't available that could meet the  
7 transportation requirements.

8 But what exact package that would be I --  
9 we would have to talk to the transportation people.

10 MS. LOPAS: All right, Karen, I'm sending  
11 you a message. If you want a specific response to  
12 this, maybe from one of the transportation folks that  
13 we know, send me your email here, and I'll get your  
14 email. Maybe they can get in touch with you to help  
15 you understand.

16 MR. MCCARTIN: The one thing I can say, I  
17 know in DOE's FEIS, I believe it is a Type B package  
18 that they said the GTCC would be transported in.

19 Now, because I'm not a transportation  
20 person, Type B has a very specific meaning in the  
21 transportation regulations and requirements. But, you  
22 know, I'm not prepared to explain exactly what that  
23 means.

24 MS. LOPAS: Okay. All right. So, Karen,  
25 just send a message here. If we end the webinar

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1 before you end up sending me your email, you can also  
2 send an email to Cardelia and/or Kim. And their  
3 contact information is in the presentation, and I'll  
4 bring that up right now.

5 Okay. So let's do a final call here. I  
6 don't have any other questions on the webinar. So  
7 final call for webinar questions and final call here  
8 for questions on the phone. So star 1 on the phone.

9 Lorraine, do we have anybody right now on  
10 the phone?

11 OPERATOR: I'm showing no questions at  
12 this time.

13 MS. LOPAS: Okay. Why don't we -- while  
14 we wait for those last couple questions to come in if  
15 there are some, Cardelia or Tim or Trish, does anybody  
16 have anything they want to follow up either on the  
17 comment period or any other closing remarks?

18 MS. HOLAHAN: Pennsylvania mentioned that  
19 they wanted an extension, you know, put it in writing,  
20 and, you know, we'll consider it.

21 MS. LOPAS: Okay.

22 MS. HOLAHAN: And this a fresh start.

23 MS. LOPAS: Yes.

24 MS. HOLAHAN: And I would just say, you  
25 know, we've had a very fervent conversation here

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1 today. We've had a lot of questions. Sometimes we  
2 can't always get to the breadth or depth of answering  
3 some of your questions during these kinds of  
4 encounters. I really want to go back and say, please,  
5 put your comments in writing, and put the docket  
6 number on there. That way your question does not --  
7 and comments do not get lost. And we will have a  
8 better opportunity to review and evaluate your  
9 comments and questions.

10 So in doing that, you're helping us, and  
11 we are helping you, and we create a win-win for  
12 everyone.

13 And this is Trish again. I'd like to  
14 thank everybody for their participation, and the staff  
15 here, especially to make it a meaningful dialogue.

16 MS. LOPAS: Okay. Let's see. Lorraine,  
17 did we have anybody pop on the line during that time?

18 OPERATOR: Yes, we did. Give me one  
19 moment, please.

20 It looks like their name was not recorded.  
21 But your line is open. Just go ahead and speak out.

22 MR. CAMPER: Hello, can you hear me? This  
23 is Larry Camper.

24 MS. LOPAS: Hi, Larry, yes.

25 MR. CAMPER: Can you hear me?



1                   Hi, how are you? First of all, thank you,  
2 staff, for your hard work today, very good job, thank  
3 you.

4                   I'd like to make one comment and then ask  
5 a question. I think it's very important for everyone  
6 listening in to understand that currently, TRU waste  
7 in excess of 100 nanocuries per gram is in fact,  
8 orphan waste. If it's not cited within the tables,  
9 there's no place for it to go. There's a large  
10 inventory of GTCC waste today, and it will be  
11 increasing.

12                   And I think what we should all do is look  
13 carefully at the additional requirements that the  
14 staff is citing that would be added to Part 61 to  
15 address the disposal of GTCC waste if in fact a  
16 rulemaking proceeds.

17                   That's the comment. The question that I  
18 have is I'd like you to refer to table 3-1, and then  
19 in turn, table 3-4.

20                   And the question is this, I know that most  
21 of the remote-handled waste from West Valley has been  
22 deemed to be suitable for near-surface disposal with  
23 the exception of 540 cubic meters of waste identified  
24 as West Valley decontamination of NPPB, which staff  
25 included -- exceeded 10,000 nanocuries per gram.

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1           Can you speak a bit more as to the  
2 radionuclides and amounts that led you to that  
3 conclusion and therefore the conclusion that it was  
4 not suitable for near-surface disposal? Thank you.

5           MR. MCCARTIN: Yes, in that particular  
6 situation, decontamination activities that are going  
7 on at West Valley of the main plant processes, a  
8 processing building. And I will -- my understanding,  
9 and I'm looking through to confirm, but it's americium  
10 and plutonium.

11          MR. CAMPER: Americium-241, 41.

12          MR. MCCARTIN: Yeah. Americium-241 is 41  
13 of the nanocuries. And I think the other approximate  
14 half of the curie amount is plutonium.

15          And so, it's those two, but I think that's  
16 what you're looking for.

17          MR. CAMPER: Tim, thank you for that. Is  
18 there a specific place where there's inventory amounts  
19 are cited that I could turn to in the analysis? Or  
20 better yet within the DOE FEIS?

21          MS. LOPAS: Repeat that, Larry. Is there  
22 a specific --

23          MR. CAMPER: Is there a specific place  
24 where one can look at the inventory -- the amount of  
25 the americium and plutonium either within this impact

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1 analysis or DOE FEIS?

2 MR. MCCARTIN: Well, certainly -- well,  
3 for the 17 waste streams, you won't -- you could get  
4 it out of the FEIS, but it would be pretty difficult.

5 If you go to the document that's  
6 referenced, the NRC 2019, there is an appendix that  
7 gives the inventory for each one of the 17 waste  
8 streams. And in there you will see -- and because of  
9 the 17 -- I'm looking real quick -- I think, A-6.

10 MR. CAMPER: Tim is that the technical  
11 analysis document cited in Appendix B?

12 MR. MCCARTIN: Yes.

13 MR. CAMPER: Okay, very good.

14 MR. MCCARTIN: And there's an Appendix A  
15 that has all of them. Yeah, and it's Table A-6.

16 MR. CAMPER: Yeah, that's the document  
17 entitled, technical analyses of the hazards and  
18 disposal of greater-than-class C waste, NRC 2019  
19 referenced on B-1 of Appendix D, is that correct?

20 MR. MCCARTIN: Correct.

21 MR. CAMPER: And that's where you'll find  
22 more detail as to the inventory that lists that  
23 inclusion, right?

24 MR. MCCARTIN: Yes.

25 MR. CAMPER: Okay. Great. Thank you.

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1 MS. LOPAS: Okay. Lorraine, do we have  
2 any other questions?

3 OPERATOR: Yes, our next question. The  
4 name was recorded as Concerned Citizens for Nuclear  
5 Safety. Your line is now open.

6 MS. ARENDS: Thank you. My name is Joni  
7 Arends, and I'm with Concerned Citizens for Nuclear  
8 Safety based in Santa Fe. I thought I heard earlier  
9 that this will be transcribed. And I wanted to  
10 understand when the transcription would be available?

11 MS. LOPAS: Cardelia, will the transcripts  
12 be publicly available?

13 MS. MAUPIN: Yes, we will give the  
14 transcriber I think they it takes probably seven days  
15 to get it back to us. And we would -- we have a  
16 public website on GTCC, and we can post it there. And  
17 we can also probably post it on our docket as well, so  
18 it'll be easy access.

19 MS. ARENDS: Oh, thank you so much. And  
20 then I have another question based on the previous  
21 comment. Is it possible -- you described throughout  
22 the webinar about the 17 different waste streams. And  
23 I'm concerned now that you're saying in answer to the  
24 previous question, it's going to be really hard to  
25 reconstruct that. I think it's really important for

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1 NRDC -- or NRC to provide references for each page or  
2 a reference for the 17 different waste streams based  
3 on the final EIS for GTCC.

4 MR. MCCARTIN: Well, okay. I'm not sure  
5 -- maybe I -- in terms of reconstructing, you would  
6 have -- you know, the information is in the FEIS.  
7 We're the ones that took that information and  
8 distributed to 17 waste streams.

9 Those 17 waste streams are presented in  
10 the NRC 2019 document in an appendix. Each waste  
11 stream has a full listing of the inventory et cetera.

12 Now, what I was saying is if you go to  
13 DOE's FEIS, you are not going to be 17 waste streams.  
14 I can go back and recreate exactly -- okay, this is  
15 that one, this is this, and pull it out, but it's not  
16 the easiest thing to do because it took me a while to  
17 do that. But I mean it is possible.

18 Anyone who wants to know, I can show  
19 exactly where I got that waste stream and how I did  
20 it. But for simplicity, if you want to know the 17  
21 waste streams, they are every -- each one of them is  
22 explained and described in the appendix of that  
23 document.

24 MS. ARENDS: In the appendix of the NRC  
25 2019 document?

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1 MR. MCCARTIN: Correct.

2 MS. ARENDS: Okay, great.

3 MR. MCCARTIN: Appendix A. Each one of  
4 them is there. But I will say -- if there's one thing  
5 I have to say is that what the 17 waste streams are  
6 very good at, in my opinion, which having developed  
7 it, I guess I'm biased, but you can see there is a  
8 wide range of variability between each of these waste  
9 streams.

10 And so that's what we're trying to stress,  
11 that if you're going to dispose of something, you're  
12 going to have to describe what you -- I'm not saying  
13 these are -- they're accurate with respect to what's  
14 in DOE's FEIS, but some of these future waste streams  
15 if they're different -- whatever GTCC waste is being  
16 suggested for disposal, as has been discussed, you  
17 need to have a basis for the inventory and analyze  
18 that inventory, and I think all we're trying to show  
19 here is that variability is quite significant.

20 And some of it will be much easier to  
21 demonstrate safety in an inner-surface disposal  
22 facility. Some will be more difficult. Some may not  
23 be possible.

24 MS. LOPAS: I just want to clarify here,  
25 Tim. This document that lists the waste stream is

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1 this an appendix or is this a reference in our  
2 appendix to the Reg Basis?

3 MR. MCCARTIN: It's a reference --

4 MS. LOPAS: Okay.

5 MR. MCCARTIN: -- in the Reg Basis.

6 MS. LOPAS: Okay. Is it the ML number?

7 Okay, so you'd have to go to ADAMS, folks.  
8 And so that ML number, if you're interested, is  
9 ML19162A259. So if you are familiar -- sorry, go  
10 ahead.

11 Do you need me to repeat?

12 MS. ARENDS: No, I appreciate the  
13 reference. As a state that is being targeted or being  
14 from a state that's being targeted for this waste  
15 disposal. I think the more specificity that you can  
16 provide now with regard to the variability of the  
17 waste -- the 17 waste streams, and the volume that  
18 you're anticipating will be very important, especially  
19 if we move down this road.

20 MR. MCCARTIN: Right, and like I said,  
21 that reference is Appendix B reference list in the Reg  
22 Basis has this NRC 2019 document, but I would refer  
23 you to table 3-3 in the Reg Basis, which does -- is a  
24 table that gives each of the waste streams according  
25 to the transuranics concentrations with half-lives

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1 greater than 55 years.

2 And the volume. And so, if you, you know  
3 -- as we have said the transuranic waste pose some  
4 unique issues for the intruder, for operational  
5 hazards. And you can see there the kinds of volumes,  
6 and as you go up the table from bottom to up, the  
7 concentrations of transuranics are increasing.

8 And that was one place where we're trying  
9 to give people perspective of the variation that goes  
10 from zero actually for large sealed sources, which is  
11 just cesium-137, which is not a transuranic, which is  
12 why it's zero, all the way up to 85,900 nanocuries per  
13 gram.

14 So you can see -- that to me is one of the  
15 better tables in the Reg Basis that gives a sense of  
16 the volumes and the hazards based on the  
17 concentrations of transuranics.

18 MS. LOPAS: Okay, I have one more comment  
19 here that I'm just going to read from Karen Hadden.  
20 And Karen I'm going to read it aloud, but I also -- I  
21 think you know that you should submit this in writing.

22 So comment -- Karen says, geologic  
23 disposal is needed for GTCC and GTCC-like waste. SEED  
24 Coalition, the organization I represent, does not  
25 advocate for disposal of either the WIPP Site or Yucca

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1 Mountain, but shallow burial up to 120 feet deep is  
2 not appropriate as laid out in the generic EIS. A  
3 site-specific EIS is needed for the WCS site.

4 So thank you, Karen, for that comment, but  
5 make sure that you get that comment in writing by the  
6 September 20th deadline on nrc.gov or the rulemaking  
7 email.

8 Lorraine, do we have any other comments on  
9 the phone?

10 Are you there, Lorraine?

11 We can't hear you, Lorraine.

12 OPERATOR: Diane, your line is open.

13 MS. D'ARRIGO: Thank you. I just wanted  
14 to also support Pennsylvania's request for an  
15 extension on the comment period on this. There's  
16 probably really not a need to rush it.

17 It's been a long time. And I'm for a long  
18 comment's extension.

19 MS. MAUPIN: Okay, thank you. And going  
20 back to what you said earlier, if we could get those  
21 kind of comments that you want to come -- extension  
22 period extended in sooner rather than later because we  
23 would have to basically do another Federal Register  
24 Notice to extend it.

25 And we would have to discuss this with,

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1 you know, our management here. So the sooner we can  
2 get those kind of comments in writing, we can, you  
3 know, consider them and take the appropriate action as  
4 soon as possible.

5 MS. LOPAS: All right. Lorraine, are  
6 there any other comments on the phone?

7 OPERATOR: Yes, Larry Camper, your line is  
8 open.

9 MS. LOPAS: Hi, Larry.

10 MR. CAMPER: Yes, hi, can you hear me?

11 MS. LOPAS: We can.

12 MR. CAMPER: Oh, good. Thank you. In  
13 listening to some of the questions that are being  
14 asked, particularly from concerned stakeholders in  
15 Texas, I would draw to everyone's attention to the  
16 fact that the NRC staff also did a prior analysis  
17 around the questions for GTCC disposal. And I think  
18 you can find a lot of very useful information in  
19 Enclosure 2 to SECY-15-0094.

20 It's entitled, technical considerations  
21 associated with greater than Class C low-level  
22 radioactive waste disposal and qualitative examination  
23 of disposal challenges. And I think that that  
24 information, which is rather extensive coupled with  
25 the work that's done in the current Reg Basis document

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1 can also serve to answer some of your questions about  
2 the disposal of GTCC waste, and in turn, the kinds of  
3 changes that the staff is proposing that if a  
4 rulemaking were to proceed.

5 So I think that could be useful  
6 information for background reading as well. Thank  
7 you.

8 MS. LOPAS: Okay. Thank you.

9 OPERATOR: There are no further questions  
10 in queue at this time.

11 MS. LOPAS: Okay. All right everybody,  
12 with that we are going to end the webinar. I do have  
13 one follow-up that I will get from Karen Hadden to  
14 Cardelia regarding transportation, but please give  
15 your comments in by September 20th. If you have a  
16 request to extend the comment period, please get that  
17 in ASAP. You can email that to the rulemaking email  
18 real quickly.

19 And so with that, we will end today's  
20 webinar. Thanks, everybody for your participation,  
21 and have a great day.

22 And court reporter, we're going to stay on  
23 the line for you. So we will hang on.

24 (Whereupon, the above-entitled matter went  
25 off the record at 3:28 p.m.)

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