

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

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MEETING ON THE TEN-YEAR PLAN TO ADDRESS IMPACTS OF  
URANIUM CONTAMINATION ON THE NAVAJO NATION AND LESSONS  
LEARNED FROM FORMER URANIUM MILL SITES

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FRIDAY,  
APRIL 22, 2022

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The Commission met at the Hilton Garden Inn, located at  
1530 W. Maloney Avenue, Gallup, New Mexico, at 6:47 p.m. MDT,  
Christopher T. Hanson, Chairman, presiding.

COMMISSION MEMBERS:

CHRISTOPHER T. HANSON, Chairman

JEFF BARAN, Commissioner

DAVID A. WRIGHT, Commissioner

ALSO PRESENT:

BROOKE P. CLARK, Secretary of the Commission

BERNICE AMMON, Acting General Counsel

PANELISTS:

JONATHAN NEZ, President of the Navajo Nation

VALINDA SHIRLEY, Executive Director, Navajo Nation EPA

EDITH HOOD, Red Water Pond Road

Community Association

BRIAN CROSSLEY, Water and Fish Program Manager,

Department of Natural Resources, Spokane Tribe of

Indians

WILLIAM FRAZIER, Site Manager, Office of Legacy

Management, U.S. Department of Energy

MICHAEL MONTGOMERY, Division 9 Superfund Division

Director, Environmental Protection Agency

STEVIE NORCROSS, Assistant Director, Division of Waste Management and

Radiation Control, Utah Department of Environmental Quality

MARK KAUTSKY, UMTRCA Program Manager, Office of

Legacy Management, U.S. Department of Energy

CATHERINE HANEY, Deputy Executive Director for

Materials, Waste, Research, State, Tribal,

Compliance, Administration, and Human Capital

Programs, Office of the Executive Director for

Operations

JOHN LUBINSKI, Director, Office of Nuclear Materials

Safety and Safeguards

BILL VON TILL, Branch Chief, Uranium Recovery and

Materials Decommissioning Branch, Office of Nuclear

Material Safety and Safeguards

JESSIE QUINTERO, Branch Chief,

Environmental Review Materials Branch

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

6:47 p.m.

CHAIRMAN HANSON: Good evening, everyone. With the arrival of all of our panelists this evening, I think we can get started. I want to thank you all for being here.

I'm Chris Hanson. I'm Chair of the United States Nuclear Regulatory Commission. And we are -- the purpose of the meeting tonight is for the NRC Commission to engage in a discussion about the Navajo Ten-Year Plan and to address the impacts of uranium contamination on the Navajo Nation and receive updates on and lessons learned from remediation activities at other former uranium mill sites throughout the West.

The format for this meeting will be somewhat unlike other NRC public meetings you may have attended in the past. At this meeting, the Commission, myself, Commissioner Baran and Commissioner Wright will hear from a panel consisting of NRC experts, interagency partners, our hosts from the Navajo Nation as well as we have someone here from the Spokane Tribe. And the purpose, really, of the meeting is for the Commission to engage with these folks directly in an open and public format.

And while the NRC hosts a variety of public meetings where we do take comments from the public and answer questions, tonight's meeting will really be focusing on a discussion I think among the panelists here.

So, this meeting is also being broadcast on the web. And we want to have that opportunity to engage and the panelists have a dialogue and learn further.

Earlier today we had an opportunity to hear directly from the community in a separate meeting at the Red Water Pond Road Shade House.

1                   For those members in attendance tonight and listening in  
2 remotely, I want to thank you again for sharing your time and your hospitality,  
3 opening your home to us.

4                   I found it very valuable and quite moving to hear from  
5 members of the community directly. You all live here. You know the land  
6 and what you have to say is very important to us at the NRC.

7                   The NRC has not done a meeting outside of Washington in  
8 a number of decades. At the meeting this afternoon, there were a couple  
9 people who maybe mentioned that. I think that's really unfortunate. And I'm  
10 glad that we can have this meeting now even if past efforts, I think, to get out  
11 of Washington fell short.

12                  So, again, I want to thank the Navajo Nation for having us  
13 here, for being so open to having this meeting, to engaging with us so  
14 thoughtfully and having this meeting here in Gallup. So before we begin, I'll  
15 recognize President Jonathan Nez of the Navajo Nation for any opening  
16 remarks he'd like to make.

17                  PRESIDENT NEZ: Thank you. Chairman Hanson,  
18 Commissioners, (Translation of Native language spoken: Greetings). And we  
19 welcome you to Indian Country, you know, Navajo Nation. And as was  
20 mentioned, we were at Red Water Road community. So some of us are still  
21 taking the sand out of our ears and our hair. And that's just what, you know,  
22 we live with here in the Southwest, a lot of wind.

23                  And if there are over 500 uranium mines, just imagine what  
24 we're breathing in, what the local community people are breathing in and that  
25 affects our health. And I'll mention a little bit more in my testimony this  
26 evening.

1 (Translation of Native language spoken: My relatives, my  
2 people, we are extending out greetings to you here again. We've spoke to  
3 the people (NRC Commissioners) who are here with us. We've been in  
4 discussions on many issues, plans, and educational information that we've  
5 received which will be a part of further dialogue to arrive at a solution. I'm  
6 thankful for the meeting, for sharing your concerns, your comments, and  
7 educating us. I'll close here.) Thank you so much, Chairman, Commission.

8 CHAIRMAN HANSON: Thank you, President Nez, for  
9 those remarks and, again, be willing to join us.

10 So tonight we'll hear from two panels. The first panel will  
11 be specific to the impacts of uranium contamination on the Navajo Nation.

12 The second panel will discuss ongoing remediation activities  
13 at former uranium mill sites and the lessons learned from remediation of  
14 uranium mill sites, interagency cooperation and Tribal engagement.

15 We'll take a short break between panels. With each panel,  
16 we'll listen to the presentations, and then the Commission will engage the  
17 panel members with questions once everyone is finished.

18 Before we start, I will ask my fellow Commissioners if they've  
19 got any remarks they'd like to make.

20 COMMISSIONER BARAN: Thank you, Chairman. My  
21 name is Jeff Baran. I'm one of the Commissioners on the NRC.

22 The widespread uranium contamination in and around the  
23 Navajo Nation is a shameful tragedy. What happened was wrong. And the  
24 federal government bears most of the blame.

25 In spite of its trust responsibility, the federal government  
26 allowed millions of tons of uranium ore to be mined and milled in the Navajo

1 Nation to supply the yellowcake used to build the nuclear weapon stockpile  
2 during the cold war. Workers and communities were not protected or even  
3 warned of the dangers.

4 Regulations in place at the time were scant. And the  
5 resulting contamination was largely just left behind to threaten the health and  
6 safety of the Navajo people. The federal government failed the Navajo for  
7 decades. It is a disgraceful record.

8 I started working on these issues 15 years ago in 2007 when  
9 the U.S. House of Representatives Committee on Oversight and Government  
10 Reform held a hearing to understand the scope of the problem and what  
11 needed to be done to clean it up.

12 Since then, some progress has been made. But there is a  
13 huge amount of work left to do. The challenge is daunting. NRC's role is  
14 primarily to provide oversight of the former mill sites. As a result of this  
15 responsibility, NRC is reviewing a license amendment application to dispose  
16 of mine waste from the Northeast Church Rock mine at the UNC mill site.

17 Even though NRC's role in the Ten-Year Plan is limited, I  
18 proposed this Commission meeting to my colleagues because the cleanup  
19 work is absolutely critical, and I wanted the Commission to hear directly from  
20 the Navajo communities affected by the uranium contamination.

21 As the Chairman mentioned, this kind of field meeting is  
22 almost unprecedented for the Commission, and I hope that it shows how  
23 seriously we take your concerns.

24 I appreciate the willingness of the Red Water Pond Road  
25 community residents to share their stories, experiences, and views with us  
26 earlier today. We're honored that President Nez, Ms. Shirley and Ms. Hood

1 hosted us this afternoon and are here with us this evening.

2 I look forward to their presentations and discussions.

3 Thank you.

4 COMMISSIONER HANSON: Thank you, Commissioner  
5 Baran. Commissioner Wright?

6 COMMISSIONER WRIGHT: Thank you, Mr. Chairman.  
7 Good evening, everyone. My name is David Wright. And I'm honored to be  
8 here tonight and to have a dialogue on the Ten-Year Plan.

9 I really look forward to hearing from our partners from DOE,  
10 from EPA, the Navajo Nation, from Ms. Hood and from Ms. Shirley as well.  
11 And I really appreciated listening and learning from the Red Water Pond Road  
12 community earlier today. So thank you very much for your hospitality. I feel  
13 like I made a few new friends today.

14 I came here to listen and to learn. And I hope that what I  
15 will hear and what I have heard today will help me make a better-informed  
16 decision on things going forward. So with that, Mr. Chairman, I'll turn it back  
17 over to you.

18 COMMISSIONER HANSON: Thank you, Commissioner  
19 Wright. President Nez, the floor is yours.

20 PRESIDENT NEZ: Thank you, Mr. Chairman, members of  
21 the Commission and our own Navajo Nation, EPA, and our federal partners,  
22 our friends here today and, of course, our community members.

23 (Translation of Native language spoken: My maternal clan is  
24 the Salt clan, and my paternal clan is the Ta'neszahnii. My maternal  
25 grandfathers' are Bitterwater clan and Tlchiininii are my paternal  
26 grandfathers'.). So we thank you for gathering here tonight.

1                    Since World War II some 80 years ago, the Navajo people  
2 have lived with the burden of uranium mining activities and their hazardous  
3 aftereffects.

4                    U.S. EPA reports that between 1944 and 1986, 30 million  
5 tons, or about 66 billion pounds, of uranium ore were extracted from the sacred  
6 lands of the Navajo people. They have also stated that our Reservation sits  
7 on a wealth of uranium still.

8                    Many Navajo people, like the community members of Red  
9 Water Pond Road, were raised and lived most of their lives amid mining activity  
10 or near abandoned uranium mines. Men worked in the mines without  
11 protection. Their mothers and wives washed their clothes, which were  
12 covered with radioactive dust. And their children played in ponds, which were  
13 filled with radioactive effluent.

14                    Today you heard firsthand of accounts of how their lives  
15 have been adversely impacted by the uranium mining that was vital to the  
16 security of the United States of America.

17                    Firsthand accounts, some of our Navajo people will tell you  
18 of the ill health effects that they suffer from. Others will recount having  
19 worked in mines like the abandoned ones surrounding us, Quivira and Kerr-  
20 McGee Mines, and more Navajo, young and old, will tell of having been  
21 present at one of the worst one of the radioactive spills in U.S. history, which  
22 occurred not far from here, but that failed to receive national attention like the  
23 Three Mile Island did.

24                    Know that these accounts are hard for some of our Navajo  
25 people to express because they must relive and feel all of those emotions that  
26 come with it.



1                   We have been loyal citizens of our country, the United  
2 States of America. And multitudes of Navajos have served in the Armed  
3 Forces in many conflicts across the globe in service to her ideals, which call  
4 for fair and equal treatment for all citizens, Native and non-Native alike.

5                   I want to talk to you about the Northeast Church Rock mine  
6 site, which is just down the road from our meeting tonight, as you witnessed  
7 earlier today. It is one of the largest mines on the Navajo Nation, and it is the  
8 highest priority mine for cleanup due to its size and also the location of a  
9 community nearby.

10                  It was operated by the United Nuclear Corporation, a  
11 company owned by General Electric, from 1967 to 1982. The plan is for  
12 approximately 1 million cubic yards of contaminated mine waste to be  
13 removed from the Northeast Church Rock mine site and consolidated primarily  
14 at the nearby United Nuclear Corporation mill site just off the Reservation.

15                  Here in summary is how the decision came about. Over 20  
16 years ago in the early 2000's, the Navajo Nation requested that EPA take the  
17 lead for the Northeast Church Rock mine cleanup.

18                  The federal agency oversaw the company's investigations  
19 of the mine site and initial time critical cleanup actions to remove  
20 approximately 200,000 tons of contamination found in the residential area.

21                  After receiving public comment on the engineering  
22 evaluation and cost analysis, EPA decided to consolidate and move the  
23 radioactive waste to the nearby UNC mill site.

24                  In 2014, EPA negotiated an enforcement agreement with  
25 General Electric to complete the design for this work. The next year, EPA  
26 and the company signed the agreement, called an Administrative Order on

1 Consent, and began the design process.

2                   A few years later, the United Nuclear Corporation and  
3 General Electric finalized the design and submitted a license amendment  
4 request to the Nuclear Regulatory Commission. We anticipate that the  
5 Federal Nuclear Licensing Agency will make a decision on a license  
6 amendment for the NRC mill site this year.

7                   The license amendment would allow disposal of the mine  
8 waste from the Navajo Nation on top of the sizable tailings impoundment  
9 already in place. But simply driving the waste across the road, right, is not  
10 the answer. It's not the answer at all.

11                   Clearly, the radioactive mine waste left abandoned at the  
12 Northeast Church Rock Mine site must be removed. According to the Draft  
13 Environmental Statement, which was prepared as part of the application for  
14 the license amendment, leaving this mine waste in place would have "large  
15 health and environmental impacts." Even removal of the waste will have  
16 disproportionately high and adverse environmental impacts on nearby Navajo  
17 communities due to transportation-related effects, impact to air quality,  
18 increased noise level and visual disturbances.

19                   The document justifies these impacts by saying that they will  
20 last a few years only in contrast to the decades of harm surely to come to  
21 Navajo families from leaving the waste in place. But as the Draft  
22 Environmental Impact Statement also recognizes, these nearby Navajo  
23 communities are environmental justice communities, which historically had  
24 little or no say in the exploitation of the natural resources around them and  
25 certainly did not benefit from the vast profit made by the company's  
26 governance and shareholders and which disappeared from the Navajo Nation.

1                   We owe these Navajo families, many of them are seated  
2 here today, the best solution, which in their minds and my own is to remove  
3 the radioactive mine waste to an appropriate repository far, far away from the  
4 Navajo Nation and not just across the street to the location that is being  
5 proposed in the Draft Environmental Impact Statement.

6                   This will not be the first time radioactive waste will be moved  
7 long distances to preserve the long-term health of a community and its natural  
8 environment.

9                   In 2009, the Moab Utah Uranium Mill Tailings Remedial  
10 Action Project began relocating mill tailings out of the former mill site and slurry  
11 adjacent to the Colorado River to a newly created disposal site about 30 miles  
12 north. Over 10 million tons of residential radioactive material were safely  
13 relocated.

14                   The cleanup also included extracting contaminants from the  
15 groundwater underlying the site. Nearly 1 million pounds of ammonia and  
16 5,000 pounds of uranium were removed.

17                   And that's not all. EM is also tackling debris left over from  
18 the former uranium mill that once stood on the Moab site. Debris requires  
19 special attention because of its large size, jagged shape and degree of  
20 contamination. More than 30,000 tons have been safely excavated and  
21 shipped to the disposal cell this fiscal year.

22                   I ask why can't something similar be done here on the  
23 Navajo Nation? Why shouldn't it? Although it would be very costly to  
24 transport the radioactive mine waste long distance from the Northeast Church  
25 Rock mine site, those dollars and cents cannot compare to the injuries borne  
26 by the local communities. And indeed, the Navajo Nation as a whole over the

1 past 70 some years, as is now recognized, the Navajo Nation and its people  
2 have suffered disproportionately from the legacy of uranium mining and  
3 processing on Navajo lands.

4 Many Navajo uranium workers and their families became ill  
5 and many died from diseases associated both with the uranium work itself and  
6 with living near uranium mines, mills and waste dumps as you heard today.

7 The Navajo birth cohort study has revealed that uranium and  
8 toxic metals remain in the Navajo environment and continues to be a  
9 significant concern to the Tribe. Generational trauma expresses not just in  
10 the body, but in the heart and mind as well.

11 The solution to the Northeast Church Rock mine site must  
12 be commensurate, appropriate and proportionate to the historic injury to the  
13 health and well-being of our Navajo people, young and old, and to our sacred  
14 Navajo lands from which we draw physical sustenance and spiritual strength.

15 To be sure, the so-called 2020 to 2029 Ten-Year Plan of  
16 Federal Action to Address Uranium Contamination on the Navajo Nation  
17 continues the efforts of the previous Five-Year Plans and identifies the next  
18 steps in addressing the human health and environmental risk associated with  
19 the legacy of uranium mining.

20 It was developed in cooperation with multiple federal partner  
21 agencies, including the Bureau of Indian Affairs, the Department of Energy,  
22 Nuclear Regulatory Commission, Navajo Area Indian Health Services and the  
23 Agency for Toxic Substance and Disease Registry.

24 However, as with the previous plans, the Navajo Nation  
25 Environmental Protection Agency was not an active participant in the  
26 underlying development of this plan and suspects that it, too, will fail in

1 implementation.

2                   Specifically, among other priorities, the Navajo Nation calls  
3 for comprehensive groundwater studies for all uranium impact areas on the  
4 Reservation and comprehensive studies regarding all potential risk exposure  
5 pathways, including the plants we traditionally eat and use for ceremonial  
6 purposes, our sheep and livestock, which are our primary source of  
7 sustenance and the water sources many of our Navajo people still use for  
8 drinking water and ceremonial purposes.

9                   Similarly, we call for factoring traditional and cultural  
10 knowledge -- Chairman, we mentioned that earlier today -- into the Superfund  
11 cleanup process and the establishment of cancer treatment centers  
12 throughout the Navajo Nation.

13                   Let us not forget that capacity building is a huge need for our  
14 Tribe. We call for accountability and communication to the Navajo Nation  
15 from the various federal agencies regarding their outlying objectives.

16                   I thank you, Jeff. And I thank you, David and Chairman as  
17 well. I think it's a lasting friendship that we can have. In partnership, we can  
18 do much together.

19                   The Navajo Nation Environmental Protection Agency has  
20 flexibility and discretion to operate efficiently. We also ask to see how the  
21 federal government intends to fund the investigation and cleanup of the  
22 additional 305 sites not currently being addressed. The United States may  
23 no longer delay in recognizing and remediating the wrongs done to the Navajo  
24 in the name of national security.

25                   One of our most important objectives as Dine' is to protect  
26 the land, water and air within our sacred mountains so that all living beings

1 can live in balance and harmony. And (Translation of Native language  
2 spoken: I walk in beauty once again), walk in beauty.

3 Thank you for the time. And we again welcome you to the  
4 great Navajo Nation. Thank you so much, Chairman, members of the  
5 Commission.

6 COMMISSIONER HANSON: Thank you, President Nez,  
7 very much for those remarks. Next we'll hear from Valinda Shirley, the  
8 Director of the Navajo Nation EPA. Ms. Shirley?

9 DIRECTOR SHIRLEY: Good evening, everybody.  
10 (Translation of Native language spoken: Greetings.) Honorable President,  
11 thank you for your statement. And thank you, President, for being a pillar of  
12 support to me, to community members and to families and for your help in  
13 remediating the 520 plus abandoned uranium mines. Thank you, sir.

14 And I do want to say thank you to (Translation of Native  
15 language spoken: [clan mother] Edith, thank you); for your strength and for  
16 your patience and really for your strength, (Translation of Native language  
17 spoken: Thank you).

18 And then (Translation of Native language spoken: Greetings  
19 to) the Honorable members and staff of the Nuclear Regulatory Commission  
20 and then to our other panelists with us today. And then (Translation of Native  
21 language spoken: Greetings, to my relatives, and) good afternoon to  
22 everybody here with us today.

23 On behalf of the Navajo Nation, as the Navajo EPA  
24 Executive Director, I offer to the Nuclear Regulatory Commission my  
25 statement on the Northeast Church Rock site.

26 As President has stated and as the community has shared

1 with you today, the Navajo Nation has always been steadfast in our position  
2 that the waste should go somewhere else, not across the street. And you've  
3 seen today that it literally is across the street.

4 The mill site, although it is not on the Navajo trust land, it is  
5 engulfed and surrounded by Navajo trust land. It is surrounded by Navajo  
6 communities, Navajo families.

7 We understand. We are not ignorant. I know what the  
8 Navajo CERCLA laws. I know what the Nuclear Regulatory Commission  
9 does. We've had counselors and attorneys tell us these things until we're  
10 blue in the face. And many of our community members can probably tell you  
11 exactly what the CERCLA process is here today.

12 In September 2011, the Navajo -- excuse me, the U.S. EPA  
13 issued an action memorandum to locate or to dispose of the 1 million cubic  
14 yards of waste to the mill site. And in this action memorandum, the U.S. EPA  
15 acknowledged that the UNC mill site is listed on the National Priorities List, a  
16 Superfund National Priorities List site. It is beyond me still today why we  
17 would take the waste to a site that is listed on the National Priorities List.

18 U.S. EPA defines the National Priority List sites as areas  
19 where there is no release or threat of release and a site that is designated by  
20 U.S. EPA to warrant further investigation. And, again, I don't understand why  
21 you would take additional waste to a site that already has a lot of problems.

22 And some of these issues, UNC, United Nuclear  
23 Corporation, is also addressing groundwater contamination at the mill site.  
24 The UNC is also addressing source contamination, source control, and onsite  
25 surface reclamation. For these reasons alone, shouldn't we consider a  
26 different site, another alternative?

1                   In the midst of the pandemic, the Nuclear Regulatory  
2 Commission requested comments on the Draft Environmental Impact  
3 Statement for the disposal of the mine waste and the amendment of the UNC  
4 license.

5                   From Navajo EPA, we serve our communities as best we  
6 can by providing technical, scientifically ground comments to Draft  
7 Environment Impact Statements into providing some of that Dine' fundamental  
8 knowledge as we provide our comments as well, too.

9                   So within the Draft Environmental Impact Statements, we  
10 found that it was incomplete and it lacked a lot of studies, studies that are  
11 important to the Navajo people and to Navajo EPA.

12                   There was current relevant geological and hydrological  
13 studies that were lacking, studies of maximum probable flooding, full  
14 understanding of the damage to the riprap done in a single flash flood is  
15 lacking. Seismic studies in conjunction with the numerous proposed  
16 engineering changes to the Arroyo and to the current impoundment structure  
17 are lacking as well.

18                   And lastly the full, accurate toxicology study is lacking from  
19 the Draft Environmental Impact Statement. And still, upon further review, we  
20 found whole sections of the Draft Environmental Impact Statement missing.  
21 We found incorrect math, miscalculations. And there were issues stated in  
22 the Draft Environmental Impact Statement that were not addressed within the  
23 Draft Environmental Impact Statement or within any other document.

24                   The uranium mining happened underground in the Eastern  
25 Region of the Navajo Nation. Background levels of contamination such as  
26 uranium, vanadium, arsenic and even radon are very low in that area naturally.



1           One of the comments to the NRC from Navajo EPA is  
2 regarding the radon released from this decision. And then in the Draft  
3 Environmental Impact Statement the concerns were dismissed with the  
4 argument that the radon is already being released at levels well above  
5 background so there is no need to correct impoundment structures but rather  
6 strive to keep it at the already elevated levels and that's unacceptable with  
7 how many families we have living near that site already.

8           There are no accurate, consistent, and long-term air  
9 monitoring applications described in the Draft Environmental Impact  
10 Statement. Mitigation plans are unrealistic and wholly deficient in their  
11 conception. As we mentioned, climate change is a real thing. And flooding  
12 is going to be a real possibility and that needs to be factored in as well, too.  
13 That whole area is within a flood plain.

14           And then finally, Navajo EPA fully rejected the Draft  
15 Environmental Impact Statement. We felt it was insufficient.

16           And then to move forward to the Ten-Year Plan, I think this  
17 is certainly an opportunity for all of us with the federal partners, with Navajo  
18 EPA, with the federal partners identified in the Ten-Year Plan such as BLM,  
19 BIA, even the State of New Mexico, to come together and find other  
20 alternatives for this site. Where there is a will, there is a way.

21           And today you've heard all of the historic trauma that exists  
22 there. Please do not add to it by amending the UNC license. And that would  
23 be my statement this evening. Thank you so much.

24           CHAIRMAN HANSON: Thank you very much, Director  
25 Shirley. Now I'd like to recognize Ms. Edith Hood from the Red Water Pond  
26 Road Community Association. We enjoyed our discussion and appreciated

1 our discussion very much this afternoon, Ms. Hood. So I'll hand it over to you.

2 MS. HOOD: My name is Edith Hood. I am from the Red  
3 Water Pond Road. In my community we sit -- our homes are between the mill  
4 site down in the southeast direction. United Nuclear or General Electric is  
5 situated on the south side of the home sites. And on the north side, we have  
6 Quivira and of course Kerr-McGee.

7 And today you saw what happened with the wind. So we  
8 live there. But when these things came -- when the mining came in, never  
9 was such a thing discussed with us what was going to happen. But then  
10 again, we were all children when all of this took place.

11 And for the longest time, even after the mining was done,  
12 my aunt, she started bringing up "What are we going to do with this pile of  
13 dirt?", never knowing that there was danger there. Nobody said it was  
14 dangerous, not until we contacted an outside company. They were going to  
15 start sampling dirt, the Holich (phonetic) Highway. They were going to start  
16 sampling dirt along the highway.

17 So my cousin and I, we decided to jump on that bandwagon.  
18 We said, "Let's go help. Let's see what happens." And we did. We had to  
19 take samples. I think it was every so many feet, all the way back into the  
20 home site. And there they found out that the readings were jumping off the  
21 charts in there.

22 So then I think we finally got somebody's notice there. And,  
23 of course, you people know about the 1979 spill from the UNC where 94 million  
24 gallons of contamination went down the Puerco wash, which goes through  
25 Gallup and on down into Arizona. And at that time, it was also brought up  
26 that "Who is going to clean this?"

1                   So right now, we have asked them to take the waste off of  
2 Indian land, off the Navajo Reservation. But the first thing they keep telling  
3 you is no, we can't. And I got used to having the government tell me no, no,  
4 but we still keep pushing it.

5                   So right now, we want it off Indian Country. And when you  
6 keep fighting for this, you start getting into, you know, the topic of  
7 environmental injustice, racism. And then right at the time this spill  
8 happened, there was an incident at Three Mile Island. That happened. And  
9 immediately it was cleaned up. And here we are 43 years later. We're still  
10 asking for that.

11                   So we're still there. And I myself worked at the mine. I  
12 worked there. And I live right there. So it's sort of like a double jeopardy for  
13 me. I was diagnosed with cancer, which still, you know, bothers me. But at  
14 the time I remember they asked, my community asked, if I could, you know,  
15 start leading the community to get in on this. And I didn't want to deal with it  
16 at the time because I was sick. I didn't want to do anything.

17                   But today, sometimes I think, well, today, I said, "How did I  
18 get into this?" And now you know, I'm right in there, trying to get them to clean  
19 it up, maybe just not because of me but for my grandkids, my family and other  
20 people, other impacted communities across the Navajo Nation. They live in  
21 this.

22                   And I know that a lot of people have come and gone, maybe  
23 never knowing what took them. Because somehow I feel that my people, they  
24 don't understand it when you can't see something that -- I mean, you can't see  
25 uranium. You can't see radiation. So they don't know. And, of course, you  
26 know that it can't be tasted but somehow you can get it in your mouth. It will

1 get into your skin. So it's like a slow genocide over there. And we've lived  
2 with this. We ask ourselves "Why is it taking so long?"

3 I said maybe it's because you can't see it from I-40, we're  
4 way back in the hills here. So it's taken us this long and probably going 70  
5 years when the first exploratory drillers came in. We didn't know what they  
6 were there for.

7 You know, as children, we were herding sheep. But when  
8 they started drilling those places, they would take out a pit in the ground. And  
9 they had running water. And they would drill. And there would be almost  
10 like blue mush in the ground. And we were not told it could be dangerous.  
11 Our sheep was going. We had sheep herding right done in there. And even  
12 when my grandmother, while she was chasing her sheep, she fell into one of  
13 those muck. Even then, we were never told it was dangerous.

14 And then, of course, the mining started around the 1970s.  
15 And along came with it was the physical side of it, the physical traffic, the noise.  
16 And like we said earlier today, our children were going to school. They had  
17 to catch the bus almost a mile down by the highway and that was their trail to  
18 the bus stop. And that is how they got to the bus stop.

19 And then when it came time to take the readings off that road  
20 that they used to take, they had to take out at least 30 feet of dirt just to clean  
21 up that road. So you can imagine the contamination. And that road that led  
22 into our community, they had to just keep digging until they took it out. And  
23 at the same time, they were asking people to move out so they could start  
24 cleaning up some of the things they found.

25 There are three residents on the east side of where I live.  
26 They said they could leave. And I just live right over here. They said, no,

1 you're okay right there. I said, how come I'm okay over here? Is there a  
2 curtain right there that's circulating the air, you know? It seemed like he just  
3 turned around and started educating them. Did you know that the air  
4 circulates here? I said, oh, there must be a shower curtain there.

5 I mean, we had these kinds of conversations with those  
6 people at the time. Eventually, they said, okay. We'll move you all out. So  
7 when they started cleaning up, all that wind that you guys saw today, that's  
8 how it was. And I said "Why are we doing things backwards here because  
9 they were only going to clean the sites where the residential areas are." I  
10 said, you are going to recontaminate when you come up, when and whenever  
11 you come up, with a bigger plan to clean up. You're going to recontaminate  
12 and that's where we're at.

13 So if they're going to take it a mile down the road to where  
14 maybe the earth, Mother Earth, can hold it with more tons of that waste. Will  
15 it hold it? Or are we just going to make another spillway down the road,  
16 another accident. That is one of the reasons why we need it off Indian  
17 Country. We don't want it. But it's taken this long.

18 And then, you know, when doing this work, I start to find out  
19 things, like even back before that, a year after the spill, mining companies were  
20 saying that the Federal Water Pollution Control Act did not apply to mining and  
21 maintained that Native American lands are not subject to environmental  
22 protection. And the courts did not force them to comply with the U.S. Clean  
23 Water regulations until after the spill, until the 1980s.

24 So we're living there with uranium. And I remember, you  
25 know, culturally growing up we had three medicine men in the community.  
26 My grandfather was one of them. And I remember, along with my

1 grandmother, she was an herbalist, we would go out into the hills and collect  
2 this plant. But take your pollen bag, take it with you, bless the plant, talk to it  
3 before you take it out. And with that they would tell you just take what you  
4 need. That's all.

5                   And I refer back to that because these people that came in  
6 for the uranium, I said, they didn't say a damn prayer. They didn't do  
7 anything. They messed it up and left it there. So we're having to deal with  
8 that right now.

9                   And, of course, a lot of people will make promises to you,  
10 especially during election time. "I'll do this for you. I'll do this for you." I  
11 don't how many administrations we have sent in but still it sits there.

12                   So we would like that waste pile to be removed from Indian  
13 Country. And, like I said, I don't speak for just my community. I speak for the  
14 other people across Navajo Nation. And one of the things I wanted to talk  
15 about today was, you know, in New Mexico between Albuquerque and  
16 probably Gallup, they have the uranium, the mineral belt. I think most people  
17 when you bring this word up they sort of don't want to deal with it.

18                   That area is called the sacrifice zone. So you can imagine  
19 anybody could go in there and mine and not even be bothered of the thoughts  
20 of the health hazards. They don't take into consideration Mother Earth and  
21 then the health of the people themselves. They don't take that in there.  
22 That's probably why they called it the sacrifice zone.

23                   And sometimes, you know, you get so frustrated talking  
24 about these things. And for me, I take it to where -- I said, we, Indian Country,  
25 we are like the people that live in the Third World in the United States.  
26 Nobody listens to us. We're living in the Third World in the United States.

1                   And then lately with President Biden, now he's cranking out  
2 money left and right. Why can't you take care of your American people first  
3 instead of shelling out money? Give it to U.S. EPA, Navajo Nation EPA. We  
4 need it here.

5                   Yes, and that's what I want to say about environmental  
6 justice. We don't have any. We're still trying to get that, especially for the  
7 younger kids, the elderly. Thank you for listening to me.

8                   CHAIRMAN HANSON: Thank you, Ms. Hood, very, very  
9 much for your statement and your comments and your hospitality earlier today.  
10 It was very much appreciated, and we recognize the suffering and the deep  
11 tragedy that has occurred in the Navajo Nation.

12                   I'd like to turn next to Cathy Haney. She's the Deputy  
13 Executive Director for Operations at the NRC. Cathy?

14                   MS. HANEY: Good evening, Chairman Hanson, President  
15 Nez, Director Shirley, Ms. Hood, Mr. Montgomery, Mr. Crossley, Mr. Frazier  
16 and Ms. Norcross.

17                   My name is Cathy Haney. I am the Deputy Executive  
18 Director for Materials, Waste, Research, State, Tribal, Compliance,  
19 Administration and Human Capital Programs at the United States Nuclear  
20 Regulatory Commission. I'm very pleased to be here with you tonight.

21                   First, I would like to acknowledge the 1979 dam failure at the  
22 United Nuclear Corporation Church Rock site, which happened on July 16,  
23 1979. The Church Rock tailings dam failed, which resulted in the release of  
24 approximately 94 million gallons of tailings liquid into the Pipeline Arroyo. I  
25 can only begin to understand how the Navajo people felt and still feel about  
26 this event.

1                   Next slide, please. The NRC is committed to our mission  
2 of protecting the people and the environment. The NRC continues to oversee  
3 the cleanup of the Church Rock mill to address the historic releases of  
4 contaminants.

5                   As a result of the cleanup, the Church Rock mill site no  
6 longer receives uranium or stores any liquids or saturated mill tailings. In  
7 addition, the NRC has requirements and takes advantage of engineering  
8 advances to reduce the likelihood that something like this would happen again  
9 at an NRC regulated mill site. Those changes will be discussed during the  
10 second panel of this meeting.

11                   Next slide, please. This slide illustrates a visual overview  
12 of the Church Rock mill site. The site has completed surface  
13 decommissioning and reclamation of former mill facilities, three tailing cells  
14 and two borrow pits. There are two evaporation ponds that are still part of an  
15 ongoing NRC-approved groundwater corrective action program and  
16 compliance monitoring program.

17                   The NRC will continue to maintain regulatory oversight of  
18 the mill site even when it transitions to the Department of Energy's legacy  
19 management program after UNC has completed all required cleanup actions.

20                   Next slide, please. The Navajo Nation Ten-Year Plan is  
21 part of a process that began with a hearing on the health and environmental  
22 impacts of uranium contamination in the Navajo Nation, which was held on  
23 October 23, 2007, by the House Committee on Oversight and Reform led by  
24 Chairman Henry Waxman.

25                   The purpose of the hearing was to examine the adverse  
26 health and environmental impacts experienced by the Navajo people following



1 decades of uranium mining and milling conducted in and around the Navajo  
2 Reservation initiated to meet the federal government's need for nuclear  
3 weapons material.

4 The hearing also examined the extent to which the surface  
5 and groundwater contamination from the uranium mines and mills have been  
6 cleaned up.

7 The NRC is an active participant in the Ten-Year Plan along  
8 with the Environmental Protection Agency, or the EPA, Department of Energy,  
9 or the DOE, Bureau of Indian Affairs, the Indian Health Services and the  
10 Agency for Toxic Substances and Disease Registry.

11 With respect to the Navajo Ten-Year Plan, the NRC's role is  
12 limited to oversight activities for the four DOE former mill sites on the Navajo  
13 Nation and the NRC-licensed Church Rock former mill site. This mill is on  
14 private land near the Navajo Nation.

15 The DOE sites are the Tuba City, Monument Valley  
16 Processing, Mexican Hat and Shiprock sites. The DOE is responsible for  
17 conducting long-term surveillance and maintenance, annual inspections and  
18 monitoring and aerial surveys at these four former mill sites, including active  
19 groundwater remediation at Tuba City and Shiprock.

20 The NRC reviews and provides oversight for the cleanup  
21 and monitoring activities. These oversight activities include periodic joint  
22 NRC and DOE inspections.

23 The NRC is responsible for the licensing and oversight of  
24 the cleanup work being done at the Church Rock site. This mill site will  
25 transition to DOE for long-term care only after all required cleanup and  
26 decommissioning obligations are completed at the site.

1                   As part of the Ten-Year Plan, the NRC also works with the  
2 Navajo Nation, the EPA and the DOE on the NRC-licensed Church Rock  
3 uranium mill tailing site. Later on this first panel, Jessie Quintero will share  
4 information on the NRC's review of the Church Rock license amendment  
5 request, which is currently under review by the NRC staff.

6                   Next slide, please. I'd like to address the differences  
7 between uranium mining and milling. Uranium mining involves the process  
8 of extraction of uranium ore from the ground, which is then transported to a  
9 uranium mill site for processing. The NRC has no role in permitting or the  
10 remediation of uranium mine sites.

11                   Uranium milling is the first step in converting natural uranium  
12 ore into fuel for nuclear reactors. Uranium mills use chemicals to extract  
13 uranium and make yellowcake, a powder that can be processed into fuel.  
14 The milling process produces mill tailings, a wet, sandy, slurry waste product  
15 containing heavy metals and radium, which is radioactive.

16                   As a regulator for the mill sites, the NRC licenses and  
17 provides oversight of the construction, operation, decommissioning and  
18 reclamation of the sites prior to and after the mill transitions to the DOE for  
19 long-term care.

20                   NRC's main role is to evaluate proposed changes to  
21 operation and ensure that these changes are implemented to maintain safety.

22                   When a uranium mill site is operated by a private company  
23 like United Nuclear Corporation, the company's operations must be carried out  
24 in compliance with the NRC's regulatory requirements, including the  
25 responsibility to remediate contamination and prepare the site for long-term  
26 care.

1                   The UNC mill site is also an EPA Superfund site. The DOE  
2 and EPA will further discuss their roles at the Church Rock mill site as part of  
3 this meeting. This concludes my remarks. And I look forward to the dialogue  
4 at the conclusion of the panel.

5                   CHAIRMAN HANSON: Thank you, Cathy, very much.  
6 Next we will hear from Mr. Michael Montgomery. He is the Division Director  
7 for the Superfund Division in the Environmental Protection Agency's Region 9  
8 office in San Francisco. Mr. Montgomery?

9                   MR. MONTGOMERY: Thank you. Good evening,  
10 Chairman Hanson, Commissioners, President Nez, Director Shirley, Ms.  
11 Hood, fellow panelists, and our guests here today.

12                   I want to start by acknowledging that we gather here on  
13 Earth Day. And it seems fitting that, you know, we take a minute to  
14 acknowledge the damage, the legacy of uranium mining, and its  
15 disproportionate impact on the Navajo.

16                   And I'm going to focus my comments on the Ten-Year Plan  
17 which is a multi-agency effort to address the uranium mines, our partnerships  
18 with the Navajo, and the current design permit application in front of the  
19 Commission for the Northeast Church Rock site.

20                   Region 9 covers the southwest, 148 fully recognized Tribes,  
21 four states and the outer Pacific Islands. And I have a few staff with me that  
22 work on an ongoing basis, permanent basis, and a number that aren't here  
23 today. I want to acknowledge Assistant Director Will Duncan, our Project  
24 Manager Tennille Begay and Priscilla Tom, our Community Involvement  
25 Coordinator, here with us tonight.

26                   Next slide, please. So the Ten-Year Plan is a multi-agency

1 effort. The EPA is playing a central role in it. Our main responsibility is to  
2 work with our partners to assess the nature and extent of contamination at the  
3 500 abandoned uranium mines that have been identified on the Navajo Nation.

4 We characterize them. We work closely with the Navajo to  
5 characterize them. We develop options for cleanup. We seek public input  
6 and select remedies that we can implement in accordance with our Superfund  
7 law. We do this work in coordination with Navajo Nation and local Navajo  
8 communities as well as other federal agencies.

9 The Northeast Church Rock mine site, which I will focus on  
10 some more, is the first and most important Navajo Nation site that we've been  
11 working on.

12 We selected a remedy in 2011. Region 6, which has  
13 jurisdiction over the Northeast Church Rock NPL portion of the mill site,  
14 selected a remedy in 2013. And we've now completed the design.

15 I'll cover both the CERCLA process and the basis for why  
16 we continue to support the remedy as designed as the protective and best  
17 available option.

18 Next slide, please. So under the Ten-Year Plan, our goal  
19 is to expedite cleanup. We're going to begin cleanups at 110 sites during the  
20 upcoming Ten-Year Plan period. We're also working to build the capacity of  
21 the Navajo Nation EPA and the Navajo Abandoned Mine Lands Program to  
22 perform assessments and do their own cleanups.

23 Since 2008, we've awarded over \$16 million in cooperative  
24 agreements to the Navajo Nation agencies, and we continue to involve Navajo  
25 communities and chapter officials in all phases of our work.

26 It's important that we do that so we understand the

1 community's concerns and consider these goals. This work is facilitated by  
2 staff that live in the region and work very close to these communities.

3 We also work closely with the Navajo Nation to ensure that  
4 traditional life ways and Navajo fundamental law are appropriately  
5 incorporated into our process.

6 In order to better accomplish these engagements and  
7 cleanups, we are opening field offices near the Navajo Nation currently in --  
8 we're looking at Flagstaff and hopefully in Window Rock.

9 Next slide, please. So this slide provides a picture of the  
10 Northeast Church Rock mine. Many of you were out there today. This was  
11 in 2007. You can see the proximity of the residences in the foreground, which  
12 are downstream and downwind of the mine waste pile, which is the white area  
13 in the background. I'll speak a little bit later about the cleanup efforts that we  
14 did in the community.

15 For the moment, the remedy as designed would take the  
16 mine waste to the mill site and contain it in a state-of-the-art containment  
17 facility. Restoring this site to unrestricted use would safely contain the waste  
18 and provide for long-term federal stewardship close to, but off the Navajo's  
19 trust land.

20 Distinct areas with the highest levels of contamination, about  
21 3 percent of the volume, will go farther away to a licensed disposal facility.

22 Next slide, please. Some has been shared with you about  
23 this picture here, which the prior picture from 2007 was prior to several large-  
24 scale cleanups we did in residential areas.

25 These interim actions included removing waste away from  
26 the homes to the main waste pile, consolidating it onto the mine site and

1 reducing the community's exposure to contamination.

2           The mine waste pile was then covered with clean fill,  
3 stabilized and re-vegetated to prevent future exposures during the next phase  
4 of the project, which we're in.

5           We worked after this to provide voluntary alternative housing  
6 for families who decided to move away from the mine site in order to avoid the  
7 disruption that's expected to occur during the cleanup.

8           Today, approximately two-thirds of the original residents  
9 eligible for alternative housing have already moved to locations they selected  
10 both on and off the Navajo Nation.

11           Next slide, please. So this diagram shows our process.  
12 And at this point, the design is finished, and it's ready for construction. And  
13 it's contingent upon the NRC staff approval of the proposed license  
14 amendment.

15           Let's walk back a little bit though on this and talk about the  
16 prior efforts.

17           So we initially proposed this remedy back in 2009. That  
18 was after a number of years of meetings and consultations with the Navajo in  
19 the community. And when we proposed it, we received some significant  
20 objections at that time in 2009. We took two years until we made a decision.  
21 During that two years, we held 10 additional community workshops and  
22 meetings.

23           In response to these concerns, the EPA performed another  
24 evaluation of 10 alternative disposal sites. We also did additional  
25 groundwater studies and modeling of the proposed facility to verify that it  
26 would be protective of groundwater, and it would not impact the underlying

1 tailings.

2                   After careful consideration of all these concerns, we  
3 selected the alternative in 2011 based on our findings that the remedy would  
4 continue to be protective of the community and the environment and using the  
5 statute available to us.

6                   The 125 acres of trust land will be cleaned up to unrestricted  
7 use. And that would be the outcome at the conclusion of the cleanup.

8                   Let me talk -- next slide, please -- about the mill site design.  
9 This cross-section of the mill site, which you saw earlier today, helps to  
10 visualize the design and how it will contain and prevent migration from the  
11 mine waste while also improving and helping to prevent release from the mine  
12 tailing disposal area.

13                   The new cover, the evapotranspiration cover, which will limit  
14 infiltration of water, will be placed on top of the mine waste shown in the  
15 hatched area. The existing cover, shown as a thin green line above the mill  
16 tailings, will serve as a bottom liner for the mine waste and prevent  
17 commingling with the more radioactive mill waste.

18                   The remedy will also include improvements to stormwater  
19 diversion structures and keep water away from the mine waste. The mill  
20 tailings, shown here in brown are below the mine waste. And the  
21 groundwater is separated from the bottom of the tailings impoundment by over  
22 40 feet.

23                   Next slide, please. So some of the benefits, in addition to  
24 removing the contamination from the trust land, consolidating it onto the  
25 existing mill site on private land, would be significant improvements to the mill  
26 site.

1           The new cover I mentioned and the north and central tailing  
2 cell improving the stormwater controls for those and controls in the Pipeline  
3 Arroyo, are a key concern for the local community and Navajo Nation.

4           The highest concentration rates, as I mentioned, will go  
5 further away in a disposal facility. And by consolidating the waste at a  
6 federally regulated mill site, the cleanup action would provide long-term  
7 oversight to ensure protectiveness.

8           Next slide, please. During the design, EPA had extensive  
9 resources for community involvement. We devoted extensive resources to  
10 community involvement and worked with the most impacted residents at the  
11 site.

12           We had over 100 monthly calls and prior to the pandemic  
13 over 100 in-person meetings attended by U.S. EPA and our technical  
14 assistance contractor, which we provided to the community for technical  
15 assistance.

16           Teracita Keyanna, a Red Water Pond Road community  
17 member, was a member of the design review team. In this role, she had  
18 support from EPA's advisor, Technical Assistance Services for Communities.  
19 Over the years, we held many large and small workshops, open houses and  
20 high school visits.

21           During the implementation of our voluntary alternative  
22 housing, we attempted to employ Navajo-owned businesses when possible,  
23 including planning, design and construction of homes on the Navajo Nation.

24           This is our last slide. I want to close by saying that, you  
25 know, we, at EPA, take our trust responsibility very seriously. And we  
26 recognize that despite our best efforts, there's still significant concerns about



1 the design. But we believe it still demonstrates that it's the most protective  
2 and effective remedy that we can implement using our statutory tools. Thank  
3 you.

4 CHAIRMAN HANSON: Thank you, Mr. Montgomery. I  
5 appreciate your presentation.

6 Next we'll hear from Jessie Quintero. She is the Branch  
7 Chief for the Environmental Review Materials Branch at the NRC.

8 Jessie.

9 MS. QUINTERO: Good evening, Chairman Hanson,  
10 President Nez, Director Shirley, Mrs. Hood, the other panelists, and our  
11 guests. My name is Jessie Muir Quintero, the Branch Chief of the  
12 Environmental Review Materials Branch. Our group has been working on the  
13 environmental review for the Church Rock license amendment action.

14 So I will talk briefly tonight about our work under the National  
15 Environmental Policy Act, as well as our efforts to fulfill our obligations under  
16 Section 106 of the National Historic Preservation Act. Next slide, please.

17 We have been reviewing UNC's license amendment  
18 request, which we received in late 2018. UNC submitted this request to the  
19 NRC because it needs NRC approval before it can proceed with the U.S. EPA-  
20 selected remedy of moving the mine waste to the mill site -- to the NRC-  
21 licensed mill site.

22 U.S. EPA is responsible for selection of the cleanup action  
23 at the mine site. And as Mr. Montgomery acknowledged, when U.S. EPA  
24 selected moving the mine waste to the mill site, they recognized that the  
25 decision was contingent upon NRC approval.

26 If the proposed action is approved by the NRC, then the U.S.

1 EPA will require that UNC implement the approved cleanup action for the mine  
2 waste in compliance with the Superfund law. The NRC is evaluating the  
3 impacts and acceptability of adding the mine waste to the tailing disposal area  
4 of the mill site.

5 Our review of UNC's amendment request includes both the  
6 safety and an environmental review. Our role in the safety evaluation is to  
7 review their proposal and to approve the request only if it meets the NRC  
8 requirements in 10 CFR Part 40 Appendix A.

9 Also, we work closely with the DOE to ensure that any  
10 changes to the site does not negatively affect DOE's ability to take ownership  
11 and provide long-term care of the sites. We expect to complete our licensing  
12 decision by the end of this June. Next slide, please.

13 Our environmental review, which is documented in an  
14 Environmental Impact Statement, or EIS, is being completed under NEPA as  
15 implemented through our regulations in 10 CFR Part 51. The purpose of the  
16 NRC's NEPA review is to evaluate and document the potential environmental  
17 impacts of the proposed action, the movement of that mine waste to the mill  
18 site.

19 We started the NEPA process with scoping, which is an  
20 opportunity to hear from the local community on what the staff should consider  
21 in its environmental review. We then prepared a draft EIS, which provides a  
22 preliminary recommendation, which is that the environmental impacts do not  
23 preclude approval of the amendment.

24 The NRC issued a draft EIS for public review and comment.  
25 In response, we received 100 pieces of correspondence, along with comments  
26 we received at three transcribed public meetings. The staff is currently

1 completing work on the final EIS, which will include responses to those  
2 comments.

3           We have heard and understand that the community has  
4 experienced profound impacts over several decades from the operation of the  
5 Northeast Church Rock mine site and the neighboring mill site. The NRC  
6 recognizes this in the EIS and describes the impacts from historic mining and  
7 milling, as well as other future actions that might compound the effects of this  
8 proposal.

9           The staff also recognizes the 1979 dam failure in the EIS.  
10 A description of that event is included in the discussion of the baseline  
11 environment and within the assessment of cumulative impacts.

12           Throughout the development of the EIS, the staff have heard  
13 from the local community members about their experiences and concerns, as  
14 well as their family members' experiences during and after the spill.

15           They have described the physical effects on themselves,  
16 their families, their livestock, as well as impacts on their emotional and spiritual  
17 wellbeing. And is clearly evident that concerns around that 1979 spill remain  
18 to this day. Next slide, please.

19           The NRC staff evaluated the potential environmental  
20 impacts of the proposed action, as well as the no-action alternative, meaning  
21 evaluating impact of not granting the license amendment. If the NRC does  
22 not grant the license amendment, the U.S. EPA would need to reassess  
23 options for disposition of the mine waste.

24           The NRC staff's description in the EIS of the no-action  
25 alternative includes a discussion of the process that U.S. EPA used in 2009-  
26 2011 to evaluate alternatives for cleaning up the mine site before selecting

1 transfer of the waste to the mill site.

2 In addition, we evaluated two variations of the proposed  
3 project. One was the use of the conveyor belt instead of trucks to move the  
4 material, and an alternative location or source for the clean fill material for the  
5 mill site decommissioning.

6 The EIS also lays out measures to reduce impacts, which  
7 we refer to as mitigation measures. These mitigation measures were  
8 commitments made by UNC, such as stormwater runoff and erosion  
9 prevention measures; NRC-identified mitigation measures, such as additional  
10 dust suppression; and Navajo recommendations for mitigation, such as  
11 properly disposing of all mine-related buildings that still -- are still on the mine  
12 site.

13 The measures recommended by the NRC and the Navajo  
14 could be incorporated into the U.S. EPA's process.

15 In the final EIS, there will be several changes from the draft  
16 in response to the public comments. Importantly, the staff will highlight  
17 Navajo perspectives on the action by, for example, in Chapter One, expanding  
18 the discussion of the Navajo communities and the concerns and issues raised  
19 by the Navajo Government and people.

20 We will also include several new mitigation and monitoring  
21 suggestions offered by Navajo organizations and individuals. Next slide,  
22 please.

23 In addition to the EIS, we are also working with multiple  
24 parties to finish consultation under Section 106 of the National Historic  
25 Preservation Act. Now, that law requires the consideration of historic  
26 preservation on -- in federal decisionmaking. It requires us to take into effect

1 the effects of the undertaking on historic and cultural properties.

2 The Section 106 process involves consulting with  
3 appropriate state, tribal, and federal agencies to ensure all agree on how to  
4 protect historic and cultural properties. The NRC must complete the Section  
5 106 process prior to its licensing decision.

6 The NRC will be a signatory to the programmatic  
7 agreement, along with the Navajo Nation, the Navajo Tribal Historic  
8 Preservation Office, U.S. EPA's Regions 6 and 9, the New Mexico State  
9 Historic Preservation Office, and UNC.

10 If the NRC approves the license amendment request, then  
11 the license would be amended to require compliance with the programmatic  
12 agreement. And once the programmatic agreement is signed, the U.S. EPA  
13 would be the lead for its implementation. Next slide, please.

14 Throughout the NRC review, the staff have engaged with the  
15 Navajo Nation and local Navajo communities, as well as other local, state,  
16 tribal, and federal agencies. The NRC division and office management have  
17 met regularly with senior leaders at the EPA and DOE.

18 For the safety review, the NRC provided Revision 1 of its  
19 Safety Evaluation Report, or SER, for review and comment to both the DOE  
20 and the U.S. EPA. The final SER will address those comments as  
21 appropriate.

22 The NRC participated in regular calls hosted by the U.S.  
23 EPA with the Red Water Pond Road community, and we continue to  
24 participate in those calls.

25 During scoping, staff held an open house and public  
26 meetings here in Gallup to gather comments. The Red Water Pond

1 community members opened their homes and hosted NRC staff at their  
2 community meetings and potlucks.

3           The draft EIS comment period unfortunately occurred during  
4 the pandemic. And in response to comments about people's ability to  
5 engage, we extended the public period three times, resulting in the nearly  
6 year-long comment period from November 2020 to November 2021.

7           Because of the pandemic, we also adjusted to conduct  
8 outreach activities remotely and increase the number of engagement  
9 opportunities to offset not having in-person meetings. Based on feedback  
10 from the Navajo EPA staff, the NRC tried to engage in a much more focused  
11 dialogue with the community on the draft EIS.

12           Some of the Navajo EPA suggestions, like the radio  
13 broadcast or newspaper articles and ads, distributing hard copy materials, we  
14 were able to implement. Unfortunately others, like going door to door or  
15 hosting face-to-face meetings, we weren't able to implement because of the  
16 pandemic.

17           We did conduct one-on calls with community members that  
18 live closest to the mill site, in addition to the three virtual public meetings that  
19 we held. In these calls and meetings, the staff answered questions and noted  
20 any potential comments folks might share on the draft EIS.

21           A Navajo interpreter was available at meetings and  
22 exchanges, and I just wanted to give a shout-out to Ms. Joanna Manygoats  
23 for her excellent translation service. You heard from her today.

24           Also with the assistance of the Navajo EPA staff, in  
25 particular, Ms. LeeAnna Martinez and Dariel Yazzie, we were able to conduct  
26 virtual listening sessions with individual Navajo communities, such as the

1 Pinedale and the Standing Rock and the Pipeline Road community.

2 We are truly grateful for the Navajo EPA's staff's efforts to  
3 distribute hard copies to those who lived closest to the site and to post fliers  
4 to help notify communities of our upcoming meetings.

5 So the NRC staff are wrapping up the final SER and the final  
6 EIS right now. As I mentioned earlier, we expect to publish the final EIS and  
7 SER in May, late May of this year, and make the overall licensing decision in  
8 June.

9 And with that, that concludes my remarks. Thank you for  
10 the opportunity.

11 CHAIRMAN HANSON: Thank you very much, Jessie.  
12 And thanks to all the presenters.

13 As I think a little bit about our conversation this afternoon at  
14 the Shade House at the Red Water Pond Road community and the discussion  
15 this evening, I feel -- I think it's important for everyone I think at NRC to  
16 remember that, you know, our mission is to protect people and the  
17 environment. And I think we accomplish that mission on a day-to-day basis  
18 with a lot of integrity.

19 And yet I also think that we heard a lot of really important  
20 feedback this afternoon too. I think it's important that we take into  
21 consideration people's understanding and tolerance for risk. And reflect --  
22 find a way, I think, to reflect that in our decisionmaking.

23 If I could, I'd like to kind of along those lines I have a number  
24 of questions for you, President Nez, and Director Shirley, and Ms. Hood. And  
25 I guess I'll start maybe with a broad, kind of high-level question. And this was  
26 brought up in the discussion this afternoon about -- and I think Ms. Hood made

1 reference to it as well about the Dine fundamental law the wellness model and  
2 traditional life ways.

3                   And I guess I was wondering if you could speak a little bit  
4 about that as it -- when it comes to how the Navajo Nation views environmental  
5 issues, and particularly cleanup of both the Northeast Church Rock, but maybe  
6 also other mine sites more generally, and how that provides maybe a lens or  
7 a framework for evaluating the adequacy of maybe proposed actions that are  
8 on the table.

9                   PRESIDENT NEZ: Thank you, Chair, and members of the  
10 Commission and partners here, our family -- family members that are here as  
11 well.

12                   Let me first say that appreciate the presentations and the  
13 dialogue that has taken place with our Navajo Nation programs. Much has  
14 been put on paper.

15                   But let me just have you step back and what you  
16 experienced today was a part of our way of life teaching. They call it (Native  
17 language spoken: Nab7k'7y1ti), meaning talking things out. And I, well, I  
18 truly believe this is what happened today with the concerns of our citizens, our  
19 relatives of what they go through, and sharing our world view with each and  
20 every one of you.

21                   You know, there was no choice that we had when the federal  
22 government came in to mine uranium from our lands. As Edith and many of  
23 the community members said, there was nobody telling them of the dangers  
24 that was there with the mining and the milling. And we didn't know in our way  
25 of life teaching what that was.

26                   We always knew that we don't disturb Mother Earth. And if



1 we do take from Mother Earth, we place an offering to show respect and to  
2 honor those in the past, our people, our leaders.

3           And so with that miscommunication, lack of information, you  
4 know, you have many of our Navajos peoples to this day who have cancers.  
5 And I would even go as far to say that some lost their lives over the pandemic  
6 because of those individuals being in that most vulnerable population  
7 category. And never saw just compensation or even (Translation of Native  
8 language spoken: balance) or balance.

9           And I mentioned that at the meeting today, (Translation of  
10 Native language spoken: Balance). There was some imbalance. And you  
11 heard that today from our Navajo people. But that's a part of healing. I know  
12 it might been some pretty tough -- tough love today. But I look at you all and  
13 I think you all probably had some tough love at home, right. And that showed  
14 too, also, the resilience of our people.

15           We're all five-fingered beings, and our way of life  
16 (Translation of Native language spoken. We're all five-fingered human beings,  
17 right? The White people, Mexican ethnicity, indigenous people). You know,  
18 and to restore balance is what we're all talking about here today. And to keep  
19 that uranium in the ground is -- should have not -- you know, it should have  
20 been kept in the ground, I should say. Because now we have to deal with the  
21 aftereffects, you know.

22           And many of them shared our world view with you all today  
23 with the medicines, the plants that we use, the ceremonies that are done in  
24 the area. Now you can't do that because of what happened with the spill.

25           And so I thought I'd share that with you, and just also remind  
26 the Commission here that in order for (Translation of Native language spoken:

1 balance), balance, to be restored, we need to move this waste far from our  
2 people. And that's what the discussion was all about today from the  
3 testimonies that was provided.

4 So thank you, Chairman, and members of the Commission.

5 DIRECTOR SHIRLEY: That is a very hard question to  
6 answer. Me, from my point of view, I live in two worlds. There's the world of  
7 western society with the CERCLA law and everything else that applies, the  
8 science, and I love it. I consider myself a Navajo scientist along with the other  
9 Navajo EPA staff members.

10 But there's also a part of us that's very Navajo. And it's,  
11 Navajo, again, is just another word that we use to help you understand us.  
12 But for us, it's (Translation of Native language spoken: We are all Navajo /  
13 Din4). That's who we are, Dine. (Translation of Native language spoken: I  
14 am a Navajo / Din4 woman).

15 And it's -- it comes to -- it's a culture and it's a language and  
16 there's practices. And all of these -- the language itself, the practices, the  
17 ceremonies, the puberty ceremonies, our (Translation of Native language  
18 spoken: puberty ceremony), all of that is connected to the land. Without the  
19 land there is no -- no ceremonies, there is no language.

20 And this is a place for us, meaning the Navajo Nation, is a  
21 place for us to exist and keep our language alive as much as we can. And  
22 we use this land to exist. And when -- when there's 520 mine sites and all of  
23 those mine sites take away from us acres of land that we are not able to use  
24 and there is that huge imbalance in not being able to just walk wherever you  
25 want.

26 One of the things that Edith mentioned, and it brought to my

1 mind all of the exploratory drilling that is still out there in Northeast Church  
2 Rock. You couldn't just herd sheep without, you know, without being careful  
3 where you -- where you walk. And then lambs, I can imagine, can get  
4 themselves hurt in that. Riding horses is just going to be a real danger out  
5 there.

6                   And then having, again, going back to the puberty  
7 ceremony, (Translation of Native language spoken: puberty ceremony), how  
8 do you have your daughter run out there knowing that there's all those hazards  
9 out there? And it does create this -- this frightened feeling inside of you that  
10 I cannot explain.

11                   And then the other thing that I wanted to mention is I had a  
12 hard time dealing with this position, meaning being the Navajo EPA Executive  
13 Director and then having all these mine sites and not understanding why it's  
14 hurting people. And because I was told growing up that everything from the  
15 ground, everything that Mother Earth has to offer you will heal you. It will  
16 make you better. And that it is a part of who you are.

17                   So why is it that Mother Earth has something that's hurting  
18 other people or that's hurting people? And the best way that my father could  
19 explain it to me was back in the days somewhere, I don't know who witnessed  
20 it or it's -- it was a story that he shared. And he just said that it was -- there  
21 was a time when even the holy people and our Mother Earth and our Father  
22 Sky were at war.

23                   And when they were in balance and there was that  
24 disharmony among the holy people, Mother Earth had to arm herself with  
25 these -- with these weapons. And that's where this uranium came from. And  
26 that was the only way I could wrap my mind around how this could happen.

1                   And as President said, everybody is -- we are all a part of  
2 her, whether we've lost it or not, we are all a part of her. But for us, from  
3 Navajo, everything is connected to the land.

4                   And I do understand your CERCLA laws and I do  
5 understand your Nuclear Regulatory Commission processes and all of the  
6 protective actions and protective measures that you're telling me. I  
7 understand all of that.

8                   But what you don't understand is that that is one area that I  
9 will never be able to pray at. That is one area that I will never be able to  
10 access in that (Translation of Native language spoken: balance) state. And  
11 that is the best I can do to help with that question.

12                   And if my grandpa were here, he'd tell you that need at least  
13 four years of some of (Translation of Native language spoken: ceremony and  
14 balance) to kind of get your head around all of that, but that's -- but yes, that  
15 would be my response to you, honorable members of the Commission, yes.

16                   CHAIRMAN HANSON: Thank you.

17                   MS. HOOD: For me, the word fundamental law or  
18 fundamental rights, when I really think about it, for me it's a daily ritual as  
19 Navajo people. Maybe not so much as the right and wrong, but how to live in  
20 the (Translation of Native language spoken: balance) way. How to live with  
21 balance and harmony.

22                   And a lot of it will go back with our mother, you know, Mother  
23 Earth, that's who our mother is. It's our home. I usually just go back to that  
24 because I'm not too sure about that word, fundamental. So for me, that's what  
25 I take away from it, the (Translation of Native language spoken: balance), the  
26 balance, the harmony. And of course the inner connection with Mother Earth

1 herself.

2                   And of course, Mother Earth, we say is a lady. So in Navajo  
3 we follow the matrilineal side of the family. And that is the way we are raised.  
4 So we had that cultural connection, especially as a baby. They take the  
5 umbilical cord and bury it in the hopes that you will always come home to that  
6 place you call home.

7                   So for me, it's just the daily rituals that we go through as  
8 Navajos. That, I believe is the (Translation of Native language spoken:  
9 balance), fundamental rights, the law. For me, that's what it says to me. Just  
10 living that Navajo way of life and always thinking of Mother Earth, and maybe  
11 even keeping the language in there.

12                   I think I was very lucky that, you know, that I speak my  
13 language, the Navajo language. Because way back when we were children,  
14 parents I believe were threatened if you don't get your child to school. You'll  
15 go to jail. And I think, you know, I was verbally very good, I'll say.

16                   But then again, when I went to a boarding school where I  
17 had to learn English. Sometimes I wonder back how did I get to learn English,  
18 how did I -- how did I start to communicate with my, especially my first grade  
19 teacher. You talk about culture. My first-grade teacher, you know what she  
20 did one day? She was, you know, she a blonde, White woman, skinny, you  
21 know, like a model today.

22                   But talk about culture shock, you know what she did? She  
23 took out her false teeth. I mean, that was a shock for me right there. I  
24 thought, oh my God, what happened.

25                   And so for me, it's just being engaged in your Navajo culture  
26 and hanging on to it, through language, culture, you know, the ceremonies you

1 do, for me, that's what it means to me.

2 Thank you. Did I answer your question?

3 CHAIRMAN HANSON: I think so. Thank you very, very  
4 much for that.

5 President Nez, I would say that, you know, tough love is still  
6 love. I think we heard that this afternoon, and we were really grateful for it. I  
7 think it meant a lot to us that people were willing to come out and share their  
8 experiences with us. I think we felt that acutely.

9 And Ms. Shirley and Ms. Hood, I think your comments, both  
10 this afternoon and now, I think speak to, you know, we talk about the uranium  
11 mining and the 1979 spill as an environmental and a human health tragedy.  
12 But there's also an aspect in which it's a spiritual tragedy as well. And I  
13 appreciated your comments very much.

14 With that, I'll turn it over to Commissioner Baran.

15 COMMISSIONER BARAN: Thank you. Well, what to do  
16 with the Northeast Church Rock mine waste is a tough issue, and it has been  
17 for over a decade.

18 I know that Mr. Montgomery and his colleagues at EPA want  
19 to implement a solution that protects public health and the environment. I am  
20 firmly convinced of that, and I know that the Navajo Nation and Navajo  
21 communities have major concerns with disposal across the street at the mill  
22 site.

23 My sense is that a couple of big issues are driving the  
24 proposed remedy of a cell at the mill site: cost and the potential hazards of  
25 transportation.

26 Mr. Montgomery, is that right? Are those the main reasons

1 to dispose of the mine waste at the UNC Church Rock mill site, rather than at  
2 a disposal facility farther away from the Navajo Nation?

3 MR. MONTGOMERY: Yeah, those are two of the principal  
4 ones. But I think there are follow-on considerations about the availability of  
5 those facilities and about capacity for the available facilities. And of course,  
6 you know, as you mentioned, transportation concerns from communities that  
7 would, you know, have to bear the burden of the transportation impact.

8 COMMISSIONER BARAN: Are there any disposal options  
9 that are reasonably close but outside of Indian country?

10 MR. MONTGOMERY: No, not when we looked initially.  
11 When we considered alternatives in 2009, and not when we did it again in  
12 design and we looked at alternatives.

13 We very recently looked at options for another mine nearby,  
14 the Quivira mine. And that -- that look did not reveal any -- any -- you know,  
15 any sort of easier solutions for taking it out of Indian country.

16 And we don't have the authority to site facilities. We don't  
17 have the authority to create a facility for this purpose. So, and we don't have  
18 the authority to ask a private party to do that either.

19 So we are working in collaboration with the federal partners  
20 for -- in other instances to try and find solutions on federal land, but there isn't  
21 anything in the immediate vicinity.

22 COMMISSIONER BARAN: So there's -- there's no legal  
23 authority then to say, you know, use the funding the from the settlement  
24 agreement to establish a new disposal facility outside of Indian country. If it  
25 were -- if it were a brand new facility that's outside your legal authority to do  
26 that?

1 MR. MONTGOMERY: No, we can't hold property in that  
2 kind of a way. We can't -- like we don't -- you know, if you think of the  
3 Superfund law as being a law that was effectively created to come in and get  
4 parties to take responsibility and take care of that long-term management, we  
5 weren't given the authority to do that.

6 COMMISSIONER BARAN: And, you know, we're kind of  
7 talking about it a little bit in isolation, that was this one very significant mine  
8 site.

9 MR. MONTGOMERY: Right, right.

10 COMMISSIONER BARAN: Of course we've got over 500.  
11 And you know, if you look at the ten-year plan, you're talking about at least  
12 starting cleanup at 110 of them. So that's a lot of mine waste at a lot of sites,  
13 hundreds of sites potentially.

14 Do we have a sense of where all that mine waste is going to  
15 go? Because it seems like how could we do this 500 times trying to figure out  
16 the one-off solution for every mine.

17 MR. MONTGOMERY: Yeah, well, in some cases we're  
18 going to look at them, you know, together and look for solutions where there's  
19 -- where there's proximity. There may be opportunities to do a consolidation.  
20 We have to consider for every area that we identify, we have to take it through  
21 our analysis and consider all the options, including a no-action option.

22 And so we're going to have to do that, you know, maybe not  
23 100 times, but we're going to have to do a lot of them. And we have a lot of  
24 them in the works. And we're working very closely with Navajo EPA on those  
25 efforts.

26 COMMISSIONER BARAN: I know over the years EPA



1 working with the U.S. Department of Justice has made a lot of progress in  
2 terms of settlement agreements, funding for a lot of these mine sites.

3 Are the Superfund settlement agreements, other than the  
4 one with GE, is there any opportunity to use funds from those to facilitate  
5 something further away from Indian country or outside Indian country here?  
6 Or are those limited in a way that --

7 MR. MONTGOMERY: To facilitate the creation of a  
8 disposal area?

9 COMMISSIONER BARAN: Or even just an option, an  
10 existing facility somewhere, transport to a facility further away?

11 MR. MONTGOMERY: No, but I'm not -- I'm not sure I'm  
12 entirely understanding your question.

13 COMMISSIONER BARAN: Well, I guess if one of the  
14 issues is cost, right, that one of the less expensive options is to move it a short  
15 distance to the mill site.

16 If that funding's there, you know, for the GE settlement, is  
17 there something that could go on top of that funding to allow it to move further  
18 away at an existing facility somewhere? Or is there simply no facility that has  
19 the capacity and no ability to use the other settlement funds in that way?

20 MR. MONTGOMERY: No. I mean, with GE we didn't --  
21 we didn't settle, they're a -- they're an implementing party.

22 COMMISSIONER BARAN: Okay.

23 MR. MONTGOMERY: And so it's not like GE has given us  
24 a big settlement amount and we're doing that work. GE is doing that work  
25 under our enforcement authorities.

26 COMMISSIONER BARAN: I see.

1 MR. MONTGOMERY: There are other instances where  
2 we've settled with parties and they have in a sense sort of given us money to  
3 do the work. That's not the case at this site.

4 COMMISSIONER BARAN: Okay. And if the plan to  
5 dispose of the mine waste at the mill site isn't implemented, I assume the  
6 process would need to be restarted then and there would be a delay in  
7 disposal as the process kind of recommences. How long would that delay be  
8 and what would the human health risks associated with that delay be?

9 MR. MONTGOMERY: That's very difficult to say. I mean,  
10 I think that it puts us at a significant impasse, and we'd have to go back to the  
11 drawing board. And it would take -- it would take quite a few years to get a  
12 design, you know, stage that we're at now.

13 And you know, it really, you know, it's -- we're working very  
14 hard to be part of the solution on abandoned uranium mines, but our statute  
15 can only get us so far. And you know, if -- if the solution for all the mines is  
16 to take it, take all of the mine waste off of tribal land, it's -- it's going to require  
17 a dialogue that's possibly outside of our authority.

18 COMMISSIONER BARAN: Well, I know EPA's trying to do  
19 the right thing here, I know that's true. And I know it's a hard, complex  
20 problem. Let me ask you kind of the tough question, though.

21 MR. MONTGOMERY: Okay, the easy -- the first ones were  
22 easier.

23 COMMISSIONER BARAN: I'm building in toughness as I  
24 go. Would EPA proceed with the mill site option if the community it is meant  
25 to benefit opposes it?

26 MR. MONTGOMERY: Well, I think there are -- there are a

1 lot of perspectives within the community. And as I've mentioned before, we  
2 don't -- we're -- you know, we are, you know, we -- it's difficult to implement  
3 remedies where we don't get full community acceptance and full stakeholder  
4 acceptance. But we have to do it in some instances.

5 And it's, this may not come as a shock, but sometimes  
6 cleaning up hazardous waste problems you can't get everyone to agree.  
7 There's significant opposition.

8 You know, there -- if we -- so we had the authority to site a  
9 facility and if EPA had the authority to site and operate a facility in perpetuity,  
10 because this waste is sort of an in-perpetuity waste, we would run into  
11 significant difficulties getting that permitted on state land and fixing community  
12 opposition in doing that work.

13 You know, I recently returned to EPA from a position in state  
14 government where I permitted facilities, and it's extremely difficult to get  
15 facilities, new facilities permitted.

16 COMMISSIONER BARAN: Okay. Well, I have a little bit  
17 of time left. I don't know if President Nez or Ms. Shirley or Ms. Hood, do you  
18 have any kind of reaction to any of that dialogue?

19 DIRECTOR SHIRLEY: And again, I completely  
20 understand all of that. I mean, we get it. And again, I really did like your  
21 question there, how does it work out when the remedy selected goes against  
22 everything that the community -- the community opposes.

23 And the other thing to mention is that I know that the laws,  
24 for instance, are there to protect and so forth. But, and this is kind of going  
25 above all of our heads here, is that the way in which these laws were structured  
26 I don't think took into account this situation, on Indian land, on federal trust

1 lands, and so forth.

2 And I think that's a big piece missing within the CERCLA  
3 laws and other laws within the United States here, but yeah. Thank you.

4 MR. MONTGOMERY: There was a -- go ahead. There  
5 was a second part to your question about the risks. So we -- we, the  
6 temporary cover that we put on the consolidate, on the mine waste and the  
7 consolidated waste is a temporary cover. We would monitor it. It's probably  
8 good for a little while.

9 But we had originally projected at the time we selected the  
10 remedy that it would be seven years to complete the cleanup and we're in year  
11 ten of that. So that just contextualizes how long that temporary cover, you  
12 know, hard to say how long it will last.

13 You all were out there today and you saw there's some  
14 pretty high wind erosion. And we're seeing more extreme storm events.  
15 And some states like Nevada are increasing their design for mines for flood  
16 risk to 500-year storms. So the impact of climate change on the stability of  
17 the current situation is likely significant.

18 COMMISSIONER BARAN: I want to get to President Nez,  
19 but is the cover -- is the cover routinely monitored now?

20 MR. MONTGOMERY: Well, we go out there and check it  
21 out occasionally. Or do we have GE do that? GE, yeah, we do.

22 COMMISSIONER BARAN: GE does it.

23 MR. MONTGOMERY: Yeah, we require cover inspections.

24 COMMISSIONER BARAN: But it is done. We would  
25 know if there's a degradation --

26 MR. MONTGOMERY: Yes.

1 COMMISSIONER BARAN: Such that it would be returning  
2 to the prior situation --

3 MR. MONTGOMERY: Yes, we would.

4 COMMISSIONER BARAN: Okay, sorry, President Nez,  
5 please.

6 PRESIDENT NEZ: Chair, Commissioners, and our  
7 panelists, everyone that's here listening. Of course those also on the World  
8 Wide Web.

9 So the -- what I heard was that the comment was we can't  
10 get everyone to agree. So I've heard 100% of my Navajo relatives there say  
11 they don't want the waste. So I'm just wondering when you say who are these  
12 individuals that can't agree. Is it GE? Is it the federal government? U.S.  
13 EPA? NRC?

14 I understand and recognize that the cost is going to be high.  
15 I mean, we just were showered with relief funds, three times. CARES Act,  
16 ARPA, and now infrastructure by IIJA. And so there's no place in these  
17 funding opportunities that we could put additional funding onto what we're  
18 discussing to get the waste to a different facility?

19 The other thing that caught my ear is that you were saying  
20 it's very difficult to get a new repository, is that what's called? I'm not  
21 schooled in this. All I'm saying is another landfill where you can take the  
22 waste. And what's the timeline in something like that?

23 I appreciate the comment from the Commissioners here  
24 about we're talking 500, over 500 uranium mines here on Navajo. Where is  
25 it going to go?

26 Are we going to have bits and pieces going, you know, here

1 and there and we're going to have this same discussion for another site five  
2 years down the road, saying that, oh, some mine was getting, you know,  
3 remediated, you know. Again, I don't know the terminology. Cleaning these  
4 up.

5 And then the federal government says, oh, we got some  
6 private land over here, we're going to go put it over here. So it's going to all  
7 be around the Navajo Nation? That's my concern. I'm thinking 10, 20, 30,  
8 50 years down the road.

9 So what is that, what is the answer to that, you know? Do  
10 we apply for a new place where we can get all this waste to go somewhere far  
11 away from the Nation who's willing to have it in their backyard, right? That's  
12 always the question. Not in my backyard is what I hear a lot of when it comes  
13 to this.

14 And that's what we're saying. I mean, it would have been  
15 better left in the ground. Then we wouldn't have been having this issue. But  
16 national security, right. It was used for the battles and to win the wars so that  
17 we can continue to do what we want to do in this country at a cost to our health  
18 of our people.

19 So I thought I'd share that, thank you.

20 COMMISSIONER BARAN: Thank you, thank you, Mr.  
21 Montgomery, I appreciate it. It's -- these aren't easy issues. If they were  
22 easy issues, this would have been done a long time ago. But here we are  
23 trying to grapple with them. So I appreciate everyone trying to work together  
24 to find a solution on it. Thank you.

25 CHAIRMAN HANSON: Thank you, Commissioner Baran.  
26 Commissioner Wright?

1                   COMMISSIONER WRIGHT: Thank you, Mr. Chairman.  
2 It's been really interesting dialogue here. And I'm going to see if I can  
3 continue a little bit, Mr. Montgomery too. But if you'll indulge me one second,  
4 I want to talk to Ms. Shirley a second.

5                   Help me, refresh my memory just a minute, what you said  
6 something earlier in your opening remarks where you made -- you shared that  
7 you could not believe or understand why it would be located right across the  
8 street in what is a Superfund area, right? Is that, can you tell me is that -- am  
9 I capturing that right? Or if you -- you said it much more eloquent than I did.

10                  And I wanted to ask you, Mr. Montgomery, if you could  
11 respond to that and give us your comments to what -- what she said earlier.  
12 How, I mean, in a way it kind of, it sounds counterintuitive.

13                  MR. MONTGOMERY: Yeah, so there's some history here  
14 involving the mill site that I think maybe NRC staff would be better able to  
15 answer. But you know, there was -- we come in when there's been releases  
16 from facilities, right. When there's been -- when things don't go as planned,  
17 right.

18                  Either we're dealing with legacy contamination that pre-  
19 exists regulatory authorities, or we're coming in because something went  
20 wrong at a facility that's regulated.

21                  My understanding is that the site was listed because there  
22 were releases from it that required it to be put on the Superfund National  
23 Priorities List. And that's why our colleagues in Region 6 are involved with a  
24 portion of that facility.

25                  My understanding is that there's an agreement on the  
26 jurisdiction of the EPA with regards to the mill site.

1                   COMMISSIONER WRIGHT: Thank you. Earlier you had,  
2 in the questioning that was going on, and I think it might have been in response  
3 to Commissioner Baran, but you mentioned that you all didn't have authority,  
4 right, to do, maybe to create a place or to site a facility or something like that.  
5 Is that DOE? Who's responsible for that?

6                   MR. MONTGOMERY: I -- that's probably -- I don't know the  
7 extent of DOE's Legacy Management authorities and whether or not they  
8 would be able to do that within their authority.

9                   COMMISSIONER WRIGHT: Okay. Because in this  
10 afternoon when we were over at Red Water, we heard and saw that this is in  
11 a very low area, it's a flood plain, correct? And which raises concerns,  
12 because they had photos of the flooding and you know, the things that were  
13 getting washed out, which is concerning.

14                   And President Nez, that, you know, on top of all the  
15 showering of money that you were talking about, there's still COVID relief  
16 money that's out there that has not been spent too. So there's -- there's lots  
17 of money that's out there I would think that could possibly be used in these  
18 efforts.

19                   How do we get to, I guess, Mr. Montgomery, I'm going to  
20 come back to you again. How do you get -- how do we get to a yes, you  
21 know, to no, we can't do this, to a yes, we can do this? Where because we  
22 heard all afternoon about the -- how the Navajo, they want to get to consensus,  
23 they want to get to agreement, right. Where everybody -- everybody can kind  
24 of get along and go along.

25                   Is there -- is there something that would have to -- is that a  
26 congressional action that has to get us to that potential? Because there's



1 some things I recognize in your conversation with Mr. Baran, Commissioner  
2 Baran, that you say that might be outside of your ability to do. Is that -- would  
3 that require congressional action?

4 MR. MONTGOMERY: You know, I, again, I don't know  
5 what exists in the realm of possibility with our other federal partners.

6 I -- my gut would tell me that if you were to -- if the objective  
7 were to site a facilities or facilities and raise the money, you know, find the  
8 money to permit, design, and manage those in the long term, that would  
9 require something that I know certainly we don't have any authority to do.

10 COMMISSIONER WRIGHT: Right. And I'm asking these  
11 questions not to be difficult, but we heard Jessie Quintero mention, you know,  
12 that one of the options here is that the decision doesn't, you know, approve it,  
13 right. And then we're back to square one.

14 And I'm trying to figure how do we -- how do we not delay.  
15 How do we -- you know, how do we move forward, you know, and trying to get  
16 something that's very necessary, get it done. Right, and move it to quote the  
17 President, far, far away from Indian land.

18 So I'm trying to understand I guess the process for me. You  
19 know, I know our role is limited and my decision-making ability in those things  
20 is limited. But because we care, you know, we want to -- we have to be  
21 externally aware of what is out there. And if -- if we have a role, we need to  
22 know kind of when that's going to happen and how that's going to happen,  
23 right.

24 So I mean, I appreciate your dialogue here. And with the  
25 balance of time I got, Mr. Chair, I'd like to see if the President and the other  
26 panelists here would want to respond to anything that's been said here.

1                   PRESIDENT NEZ: Well, thank you, again, Chair, members  
2 of the Commission, everyone. I guess I had a couple of questions. Some  
3 have been answered to the Commissioner.

4                   But your comment about not everybody agreeing. Who is  
5 not agreeing? Is it the NRC staff that's not agreeing? I understand these  
6 gentlemen here are going to have to make a decision. Like I said, everyone  
7 over there has said not my backyard, right.

8                   Then the other is another place to put the waste, uranium.  
9 Well, what does -- I guess I'm in the same boat too. What's the resolve here?  
10 Does the Navajo Nation need to buy land somewhere in New Mexico and say  
11 okay, federal government, Navajo Nation bought that land over there. You  
12 can -- you can use that land for a place to put all this uranium mine waste. Is  
13 that an option?

14                   How long is the process? I don't know if I was able to ask  
15 questions, but I'm starting to act like a commissioner here, but you know. I'm  
16 asking these questions on behalf of my people, you know, that's it, that's all,  
17 you know, Chairman, members of the Commission. Thanks.

18                   Do you have anything to add?

19                   DIRECTOR SHIRLEY: In the office we usually kind of  
20 make fun and laugh about things every now and then, especially when we're  
21 told it's Navajo waste, you guys figure out a way to find other alternatives.  
22 And to be frank, it's DOE's. I mean, it's the federal government. And if  
23 there's a way that DOE can take some of this waste, it would be awesome.

24                   But I know that when we've asked or when that discussion  
25 came up, DOE said they only have enough -- they only have enough space in  
26 Utah for their waste. So it's. And congressional. I think it might have to be

1 there, or we might have to bring this to their attention.

2                   And but right now, I can knock on the doors of Congress and  
3 the Senate and every other place in Washington, DC, but I don't think I would  
4 -- I would be able to get in. And the RECA bill is a really good example of  
5 that. It's dead on the floor, so.

6                   But thank you, my comments.

7                   CHAIRMAN HANSON: Thank you. Thank you,  
8 Commissioner Wright for that.

9                   This is going to -- we're going to wrap up the first half. I  
10 think I really appreciate my colleagues as always. I tend to start with the  
11 philosophical and they get a little more concrete. And hopefully between the  
12 three of us we kind of cover the range of issues that need to be addressed.

13                   But we are going to, I think, touch on some of these same  
14 things about authorities, about disposal options, etc. We're going to put Mr.  
15 Frazier on the hot seat I think probably in the second panel. And I think Mr.  
16 Von Till and probably Jessie, she's going to get a second go-round as well.

17                   Because I think there's a lot of topics for discussion that  
18 address not only the issues directly relevant to the Navajo Nation, but also in  
19 Indian country. We're lucky to have Brian Crossley from the Spokane Tribe  
20 with us as well. And we're going to hear from Stevie Norcross with the state  
21 of Utah in our second panel as well.

22                   I appreciate everyone's contribution. And I want to  
23 recognize of course Mr. Montgomery got a lot of the direct questioning, but I  
24 think it's perfectly reasonable and expected for ordinary people to look at the  
25 federal government as the federal government, right. Even in an agency like  
26 the NRC where we value our independence in a lot of ways from the rest of

1 the executive branch. We're still part of that federal family.

2 And when the federal government takes an action, it takes  
3 an action. And I don't -- I don't think we should always expect people to say,  
4 well, there's this agency or that agency or this acronym or that acronym. It's  
5 the federal government, and we've got an important responsibility and a  
6 sacred trust to all of the -- all of the people of the United States.

7 With that, we'll take a five, seven minute break, as long as it  
8 takes for people to get coffee and tea and whatever else they need for the  
9 second go-around. Thank you.

10 (Whereupon, the above-entitled matter went off the record  
11 at 8:50 p.m. and resumed at 9:10 p.m.)

12 CHAIRMAN HANSON: All right. I hope everybody has  
13 had their snacks and a little bit of caffeine and we can get ready here. A  
14 couple of thoughts as we begin this next panel; I'm really looking forward to it.  
15 It is really perspectives and lessons learned from remediation activities at  
16 former mill sites.

17 And we're looking -- in addition to looking at the Navajo  
18 Nation and the lessons we've learned there, I think looking also at sites across  
19 the West is important, potentially for lessons learned and other things. I had  
20 somebody pull me aside in the break and I talked about putting Bill Von Till on  
21 the hot seat. But I wanted Bill to know up front, and Jessie for that matter,  
22 we've got some other NRC folks, I think, in the audience. They have, of  
23 course, permission to phone a friend if the questioning gets too hard.

24 As I said at the end of the last panel, I really appreciated the  
25 pragmatism and the problem-solving approach that my colleagues took. I'd  
26 like to just put it out there as kind of one government executive to another that

1 I would really appreciate the opportunity -- and Mr. Montgomery, I'll follow up  
2 with you about this -- to talk to Administrator Regan directly and to hear more  
3 about the EPA's perspective on this and their interest in continuing this. I  
4 think an executive level discussion might help clarify a few things.

5 I know we have an independent regulatory decision to make,  
6 and I want to respect that and that independence and that separation. But I  
7 think also hearing directly from the Administrator on this would be potentially  
8 helpful as well. So I'd like to kind of put that out there and follow up and reflect  
9 with him on some of the things that we've all heard and seen today.

10 So with that, I'd like to get started. I'm really happy that  
11 Brian Crossley from the Spokane Tribe has come down from Eastern  
12 Washington to join us. And I look forward to your presentation. Mr.  
13 Crossley?

14 MR. CROSSLEY: Thank you. Thanks, Commission, for  
15 inviting the Spokane Tribe to present. And thank you, the Navajo Nation, for  
16 having us here as well. I would have liked to have been out for the tour, but  
17 I was in a whirlwind rush to get here, and so I didn't make it. So I could have  
18 learned some lessons, I'm sure as well. Next slide, please.

19 And so, Spokane Indian Reservation is in northeast  
20 Washington at the southern tip of Stevens County. Next slide. And here's  
21 just a highlighted area of the Spokane Indian Reservation. And something  
22 unique to the Spokane Indian Reservation is that it included the bodies of  
23 water on three of its sides.

24 So it was the west side of the Columbia River, the south side  
25 of the Spokane River, and the eastern bank of Chamokane Creek which is  
26 important related to the Dawn Mill site. And then they just picked the 48th

1 parallel to the north. As you can see over right near Ford is the Dawn Mill site  
2 that I'll be talking about.

3 But in the central part of the reservation, Wellpinit is our  
4 community, one of the communities in our tribal administration. But then  
5 further west just above the Spokane Indian Reservation, you'll see the Midnite  
6 Mine star. That was where the ore was processed, was removed from the  
7 Midnite Mine and taken to the Dawn Mill site.

8 South of the Spokane Reservation is the Sherwood Mine or  
9 Western Nuclear we called it. And it's been reclaimed, and DOE is doing  
10 some long-term monitoring at that site. So next slide, please. Just to give  
11 you a little bit of context, the Chamokane watershed is in the orange on the  
12 right.

13 And so it's not all entirely on the reservation. There's more  
14 than half of it off the reservation. But that creek forms the eastern boundary  
15 of the Spokane Indian Reservation. And the Dawn Mill site is up about five  
16 to six miles up from the point of the bottom of the watershed. Next slide,  
17 please.

18 Here's just a picture of Chamokane Creek. It's spring fed  
19 once it gets on the reservation, nice, cold water, fish species, brook trout,  
20 brown trout, rainbow trout, a lot of other native species, sculpin, and things like  
21 that. Like I said, ordinary high-water mark is the eastern boundary of the  
22 reservation. We've kind of argued that point sometimes with the mining  
23 company, with the Dawn Mill. But we've agreed to not disagree and move  
24 on. Next slide, please.

25 Here's an overview slide of the Dawn Mill site as was in  
26 1995. It began in 1956 and operated to the 1980s, similar to sounds like

1 many around here. It processed 58 million cubic yards or cubic feet of  
2 uranium. It mostly came from the Midnite Mine.

3 And this sits just off the reservation. They had to come  
4 across the reservation with the trucks and then they would mill it here. And  
5 as you see just in the upper right of the site, there's the buildings.

6 And just to the right of that is where they actually stockpiled  
7 the ore. So as it came in off the truck, it would just be dropped there until they  
8 could just have the ore ready to go as they processed it. And then all the  
9 waste was just output into the brown area, the cleared area that you can see.

10 But initially, it was put out there without any lining. It's a  
11 very sandy, gravelly -- if anybody knows of the Missoula flood deposits, it's  
12 washed gravel. So it's very porous and very transmissive for water.

13 And as you can see, like I said, 1995, they had this. There's  
14 the pond down here, and they call that the TDA-4 which it was a pond. And  
15 it was the only lined pond at the time. Next slide, please.

16 Just some dates about when milling ceased in '82. '87,  
17 there was a closure reclamation plan. And then in 1989 is when they first  
18 found the contamination that was detected down along Chamokane Creek  
19 called western seep area.

20 And then in '92, the Dawn Mining asked to place offsite  
21 uranium mill tailings in TDA-4. Washington Department of Health who has  
22 been delegated authority by NRC to handle the sites agrees with the  
23 stipulation that groundwater remediation began. So next slide, please. So  
24 there you can see quite a bit of change at the site.

25 They started pumping water out of TDA-4 and made some  
26 pond liners in the north of there. And then they also started pumping water

1 from the contaminated wells down along the creek at that contamination plume  
2 and putting it up on site and trying to deal with water which was a tough act  
3 for Dawn Mining as it is dealing with water in the northwest where meteoric  
4 water sometimes outpaced the amount that you could evaporate out of the  
5 ponds. The buildings started being removed, and that was all going to go to  
6 TDA-4.

7                   And they were going to put additional waste into TDA-4.  
8 And then so they started taking also waste or filter cake from Midnite Mine  
9 from their water treatment process and putting it into TDA-4 as they got that  
10 approval. They did not continue to put any offsite waste onsite. Okay. Next  
11 slide.

12                   And here you can see TDA-4 is capped over. And now  
13 they've got a couple of the other ponds. They're evaporating water, and  
14 they've created another pond down to the south of there. EP-6 we call it,  
15 which is four cells, about 30 acre feet of water each.

16                   You can start to see. They're starting to grab just topsoil  
17 from around the site to do reclamation over the other ponds. So now we have  
18 contaminated mill tailings. We have a liner on top that had ponded water.

19                   And now we filled that. And now we have a liner on top.  
20 And so we have a number of situations happening. You can kind of see up  
21 in the upper right side the -- in 2009 is when they found another plume flowing  
22 straight north.

23                   And so that site there, we call it the lower north area. And  
24 it came from the ore stockpile area. Like I said, in '09 they found it and come  
25 to find out it was higher contamination into the creek than even the western  
26 seep.



1                   But they found it. The contamination came in. It was  
2 fractured ore body. And they could -- it would mobilize, set in the soil. And  
3 because when they did the cleanup, they went down so far and found out that  
4 there wasn't actually continued to be contaminated.

5                   But the groundwater was. So it had actually mobilized,  
6 went straight to groundwater, and is slowly moving towards Chamokane Creek  
7 as opposed to everything north of on the reservation flowing to the south. It's  
8 a very, very transmissive aquifer and very productive.

9                   You see a hatchery just to the north of this mill site. And  
10 that's a state hatchery. And there's a tribal hatchery just to the west, the other  
11 building that you see there. Both are spring fed and raise salmon species.  
12 So next slide, please.

13                   A couple of things that were happening in 2001. Like I said,  
14 they put the filter cake on site, and they also explored some bioremediation at  
15 the wells and did that for a number of years and found that that did not work  
16 as well. So in '08, they ceased doing any bioremediation at the site.

17                   2010, like I said, they covered the TDA and that was the end  
18 of waste accumulation at the site. They created the EP-6 in 2013. Next  
19 slide. And there's, more or less, what it looks like today.

20                   You can see EP-6 where there's the last remaining water  
21 body. And they're getting -- they've been mandated by Department of Health  
22 that they've got to get that water out of there because the pond isn't high  
23 enough and Department of Health doesn't want to be managing that. So they  
24 have a deadline here.

25                   And so they've done a few things of putting liners on top of  
26 the water -- of the ponds to collect meteoric water. So that could just be shed

1 off early in the spring as they begin their evaporation process the next season.  
2 So as you kind of look at a lot of the sample sites, you can see all the yellow  
3 dots there.

4 Some of the wells that are on the site, it is very well  
5 monitored with a series of wells around the site. We feel like they have a  
6 good characterization of the site and what's going on with the contamination.  
7 Go ahead. Next slide. And here's a slide of just showing the different  
8 plumes.

9 When I say the western seep area, it's off to the west  
10 towards our travel -- below our travel hatchery, it dumps in. There's some  
11 wetlands that the seeps flow into. And then on the lower north area is where  
12 it's flowing in up there.

13 So because the -- you look at this site and before you drop  
14 from the mill site down to the creek, there's a bluff, a steep bank. And the  
15 point of compliance is up above on that bluff. And them not being able to  
16 meet that, they asked and Washington Department of Health agreed, to let  
17 them go ahead and start an ACL, an alternative concentration limit process.

18 And that's been a number of years, and we're still in that  
19 process now. And so the next few slides, I'm just going to talk about kind of  
20 where we're at with the tribes, our take, and our analysis of the ACL process  
21 and what that means for us. So next slide, please. So this is the western  
22 seep area.

23 And as you can see whether that was removal of  
24 groundwater caused some reductions. But look at the center graph there for,  
25 like, GW-1B. There was a spike that dropped. And now you can look at the  
26 numbers.

1                   And it really isn't continuing to drop. They're still increasing  
2 over time. You definitely look at groundwater 21A. That's an increasing  
3 trend. That's a little bit lower down on the site. So we're still seeing some  
4 wells here that are increasing concentrations on the western seep area. Next  
5 slide, please.

6                   This is the lower north area. This is kind of the hottest -- it's  
7 just a graph showing the highest concentrations in the groundwater right  
8 around the site where they stockpiled the ore. And in this process, you can  
9 also look at the three wells that were picked that we choose.

10                  And definitely, you can see there's increasing  
11 concentrations of that uranium plume heading towards the creek. And  
12 subsequently when the ACL was chosen, they picked sites that were off to the  
13 north and had very low concentrations. And so we definitely pointed that out.

14                  The Department of Health's contractor consultant pointed  
15 that out as well. Next slide. And also part of that ACL process was a model  
16 that was conducted. And the red dots here are actual data, and the blue line  
17 is what they modeled and said, well, this is where it was at.

18                  And it's decreasing. And they would like to say that the  
19 plume is decreasing and therefore it's becoming -- it's stable and those  
20 numbers are good to be transferred over to the Department of Energy. But  
21 we look at that and say, well, if you took the actual data and then you moved  
22 it over on your model, if you kind of basically looked like you're just climbing  
23 right up to the top, there's not a decreasing trend here at all.

24                  And so we may be at the first part of their model. But we're  
25 definitely not decreasing at this site. Next slide. And here's this. We call  
26 this oxbow area. This is where -- this is some ponded area. That blue

1 checked area is actually ponded. We call it an oxbow. Whether it was an  
2 oxbow of the creek at one time, we don't know. It's up for debate.

3 But in the springtime, water flows through this and actually  
4 comes out right there at STI-01. It can flow right into the creek. And they  
5 wanted to sample fish and they wanted to sample bugs, the consultant  
6 company for the mining company.

7 And we said, okay, we'll let you sample fish in the creek and  
8 bugs. We want to go inside of this site sample. And so we did. They got  
9 paired samples.

10 And what you see here in this table are the samples that we  
11 took. They were right there next to us. Highest concentration we took, like I  
12 said, was 7,400 micrograms per liter.

13 Up at the Midnite Mine in Pit 3, it's about 9,500 micrograms  
14 per liter. So this is a pretty hot spot. And what they chose to use in their  
15 model was the number, as it says up here in the caption, is they used 15  
16 micrograms per liter from Sites SH-1 and SH-5 which is a gross  
17 misrepresentation of the actual data and the risk that actually exists at the site.  
18 Next slide, please.

19 So anyway, and the other thing that they picked on is -- that  
20 they picked up -- that we picked up on for sure is they want to put their point  
21 of exposure as far away from the contamination as they can. So they're at  
22 SW-9. You can see from the northern groundwater plume, lower north area,  
23 it's quite a ways downstream.

24 We have issues with that, but we've also done some  
25 analysis using their same numbers. And it doesn't -- there's a problem with  
26 that. And then also in the western seep area, you can see that SW-4.

1 Actually, it's downstream of the site.

2 That was a little closer. But still, it's the eastern bank. And  
3 the exposure is coming into the creek, and you can see it right at the bank.

4 So next slide.

5 So essentially, Department of Health, we submitted our  
6 comments to them on the ACL. Neptune was their consultant. And we  
7 agreed with all of Neptune's comments and reiterated some of our -- I mean,  
8 and emphasized more of our own as well.

9 But we'd also like to point out in our comments that really  
10 under NRC guidance, the licensee cannot -- quote, it says, the licensee cannot  
11 rely on natural flushing beyond the point of exposure to either attenuate  
12 contamination or delay the implementation of corrective action programs.  
13 And essentially by picking a point of exposure site much downstream of the  
14 contaminated plume, they're doing exactly that. And so we definitely  
15 disagree with that and hope they realize that is not a possibility.

16 Their point of exposure, as soon as it comes onto the  
17 reservation, is when that water comes through that south bank and comes  
18 onto the reservation. So anyway, and then one last slide right here. This is  
19 another human health, working on the risk analysis and the benefits analysis  
20 they did as part of the ACL requirement.

21 If you look at in the left-hand column, their analysis showed  
22 there was only 94 people. And 2004 dollars, that was worth 2,000 dollars.  
23 And the concentrations they used down at SW-9, a low number, not the high  
24 concentration.

25 And you work down through their table and they come up to  
26 me and said, well, really for -- it would be, like, 1,400 dollars to 5,500 dollars

1 would be the only benefits. And their analysis says, well, there are things we  
2 could do. But that'd cost about 4.1 million.

3 So what we did is we showed that really there's --  
4 Chamokane Creek, just like any part of the reservation, is open to all Tribal  
5 members to use. Those that live there, also decedents and spouses also can  
6 use that water body. We calculated based on 2018 dollars.

7 And then we also used a maximum uranium concentration  
8 at that SW-9 site. And just by changing those numbers, you can easily see  
9 that if they were to do some remediation, that it would definitely -- if you did  
10 the cost benefit analysis just under that scenario, it would pay. But if we look  
11 at actually the exposure at the bank which is in the right column with everything  
12 else staying the same.

13 But the concentration at the bank is 193 picocuries per liter  
14 coming out into the creek. It's upward over -- anywhere from 20 million to 80  
15 million dollars. So doing remediation is something that still we are looking at  
16 from the Tribal standpoint.

17 We hope Department of Health is considering that there's  
18 things that could be done. That really it's not -- this site is not ready to be  
19 turned over to Department of Energy. I would say that both of these sites are  
20 actually contamination that existed from prior practices.

21 I mean, anything they've done from TDA-4, we have picked  
22 up in any sampling. But it was when they put mill waste right on top of the  
23 ground and the ore stockpile came and was just put right on top of the ground.  
24 And so anyway, I appreciate the time that was given to me and to share this  
25 with you. Thank you.

26 CHAIRMAN HANSON: Thank you, Mr. Crossley. That

1 was fascinating. Next, we'll hear from John Lubinski. He's the director of  
2 NRC's Office of Nuclear Material Safety and Safeguards. John?

3 MR. LUBINSKI: Great. Good evening, Chairman,  
4 President Nez, Commissioners, and all of our guests this evening. Glad to  
5 be here with an opportunity to speak to you. My remarks this evening will  
6 focus on lessons learned from the remediation of conventional uranium mill  
7 sites. Next slide, please.

8 The NRC has a well-established program for regulatory  
9 oversight of uranium mill sites through decades of rulemaking, licensing, and  
10 oversight experience since the passage of the Uranium Mill Tailings Radiation  
11 Control Act of 1978, or UMTRCA. We have built a program of robust  
12 requirements for decommissioning, reclamation, groundwater protection, and  
13 oversight to ensure safety and protection of public health and the environment.  
14 The regulations in 10 CFR Part 40, Appendix A establish technical, financial,  
15 ownership, and long-term site surveillance criteria for tailings or waste  
16 systems.

17 Methods for uranium recovery include heap leach,  
18 conventional uranium milling, and in situ recovery. I will note that today the  
19 in situ recovery method is the most commonly used by operating facilities in  
20 the United States. The conventional uranium milling process generates mill  
21 tailings that require proper and safe disposal.

22 This slide shows the typical steps encountered during the  
23 life span of a conventional mill. My discussion focuses on the last three steps  
24 shown on the right side of the figure: decommissioning, license termination,  
25 and long-term care. In discussing the remediation and clean-up of  
26 conventional mills, it should be noted that UMTRCA established two separate

1 but related programs.

2 Title 1 of UMTRCA is focused on remediation and clean-up  
3 of sites that had been abandoned as of 1978. Under Title 1, DOE is  
4 responsible for the remediation actions at the abandoned sites and NRC  
5 provides oversight. Title 2 of UMTRCA is focused on sites that were still  
6 active in 1978 or new sites that were licensed thereafter.

7 The licensee is responsible for decommissioning and  
8 reclamation of these sites as Title 2 sites with the NRC or an agreement state  
9 providing oversight. I'll note that an agreement state is a state that is entered  
10 into an agreement with an NRC and has assumed responsibility for the  
11 oversight of uranium recovery licensees within that state. Once a disposal  
12 site has met all applicable standards, the NRC or the agreement state will  
13 terminate the license and the disposal site will be transferred to DOE for long-  
14 term care.

15 The NRC continues oversight of DOE during the long-term  
16 care of these sites. Next slide, please. This slide shows the various stages  
17 of a conventional uranium milling site. The top left image is a historical photo  
18 of the Rio Algom Ambrosia Lake Title 2 site in New Mexico when it was  
19 operating.

20 The photo in the middle of the slide was taken while  
21 decommissioning and reclamation activities were in progress at the site. The  
22 photo on the lower right shows the mill tailings impoundment which is the main  
23 feature remaining at the site today. These photos have been included to  
24 provide an example of what occurs during decommissioning and reclamation  
25 and to show what the end state of a conventional uranium mill site looks like.  
26 Next slide, please.



1 I would like to highlight three lessons learned related to  
2 decommissioning and long-term care. The first pertains to groundwater  
3 contamination. Most uranium mill tailing sites have brown water  
4 contamination as a result of mill activities that occurred prior to the more  
5 stringent requirements of our regulations today.

6 These sites utilized groundwater treatment and monitoring  
7 systems to ensure protection of public health and safety and the environment.  
8 New sites must have a liner to prevent seepage and groundwater monitoring  
9 to detect seepage before it becomes a safety issue. The photo on the right  
10 shows a liner system under construction, and the photo on the left illustrates  
11 a liner for the tailings ponds to contain liquid.

12 The site in the photo to the left also has a groundwater  
13 detection monitoring system to detect potential leakage. All current sites  
14 under remediation have groundwater monitoring systems to track the  
15 containment plume, ensure protection of the public health and resources, and  
16 in some cases to track the progress of active groundwater remediation. Next  
17 slide, please. The second lesson learned is innovation in cover designs.

18 Covers are used on mill tailings impoundments to limit radon  
19 flux and to minimize erosion. Many existing covers are resistive barriers that  
20 rely on a combination of low permeability soil layer which is to minimize  
21 infiltration of water and limit emanation of radon and a rock layer to reduce the  
22 erosion from wind and water. The graphic on the left of this slide is a cross  
23 section of a resistant cover system.

24 In recent years, there's been an advancement and interest  
25 in evapotranspiration, or ET covers. ET covers contain a low permeability  
26 layer to limit radon emanation and a soil layer to store water and provide

1 rooting material for vegetation. Water from rainfall or snowfall is stored within  
2 the soil until warmer or dryer weather evaporates the water or it is removed  
3 the soil through plant roots.

4 The graphic on the right shows a cross section of an ET  
5 cover system. Either type of cover is permissible under the NRC regulations.  
6 And selection of the cover depends on the specific parameters of the site.  
7 Both DOE and licensees are interested in utilizing ET covers at mill tailings  
8 impoundments.

9 Lastly, we are collaborating with our federal and state  
10 partners in making the license termination process more effective and efficient.  
11 Many conventional uranium mill tailing sites contain land owned by the Bureau  
12 of Land Management that must be withdrawn from the public use as part of  
13 the termination process. Recently, DOE has worked with the Bureau of Land  
14 Management to make this process more timely.

15 In working with the agreement states, we have stressed the  
16 need to work on complex and challenging technical and regulatory issues early  
17 in the process. For example, we have been working with the State of  
18 Washington on their Dawn Site and the State of Wyoming on sites that are  
19 nearing license termination. Turning to the future, any new licenses for  
20 conventional mill tailing sites must include the modern safety features required  
21 by the regulations.

22 The regulations address items such as siting, engineering  
23 controls to prevent spills or dam failures, liner systems, and groundwater  
24 monitoring systems. The NRC staff has developed publicly available  
25 guidance for review of new conventional uranium milling licenses and it's  
26 contained in a NUREG numbered 2126, and it's entitled Standard Review Plan

1 for Conventional Uranium Mill and Heap Leach Facilities. This concludes my  
2 remarks this evening, and I look forward to our dialogue later in this  
3 presentation. Thank you.

4 CHAIRMAN HANSON: Thank you, John. Now we'll hear  
5 from Mr. Bill Frazier. He's the site manager for the Office of Site Operations  
6 out of the Office of Environmental Management at the Department of Energy.  
7 He comes down to us -- we gave him an opportunity to come home down from  
8 Golden, Colorado this evening. So Bill, the floor is yours.

9 MR. FRAZIER: Hello, everyone. Good evening.  
10 (Translation of Native language spoken: Greetings), President Nez,  
11 (Translation of Native language spoken: [clan relation] grandson). Honorable  
12 Commissioners, Mr. Hanson, Mr. Wright, Mr. Baran, Director Shirley, Ms.  
13 Hood, my fellow panelists, ladies and gentlemen, (Translation of Native  
14 language spoken: my relatives, my people, greetings).

15 My name is William Frazier. (Translation of Native  
16 language spoken: My name is William Frazier. They call me Bill and Billy,  
17 too. My maternal clan is Bitterwater, my paternal clan is Tlchiinii, and my  
18 maternal grandfather clan is Hlnlghlanii, and my paternal grandfather is  
19 Bitterwater clan.) I live in Grand Junction. I know some of you don't know  
20 where that's at. (Translation of Native language spoken: It is north of  
21 Hesperus Mountain. That's where I'm from. I work for the Department of  
22 Energy, and my mother is Anna Frazier. She is from Dilkon, AZ.) Some of  
23 you may know her. She's with Dine C.A.R.E. She's been with that and  
24 working with you folks.

25 (Translation of Native language spoken: My father is Wilford  
26 Frazier). He's from Gallup. He lives here. He was a civil engineer here at

1 BIA. And I'm a civil engineer too, so I didn't fall far from the tree.

2 I just wanted to say that I was in Rehoboth in 1979. I was  
3 a sophomore. I graduated from high school there and saw all that. And also,  
4 I worked on the Pinedale Road way back in construction when I was a laborer  
5 back when they put that asphalt road together. And the community there  
6 treated us very well. So I just wanted to say thank you, Ms. Hood, and all the  
7 people from that community (Translation of Native language spoken: Thank  
8 you).

9 Like I said, I'm a site manager for the Department of Energy  
10 of Office of Legacy Management at the Grand Junction, Colorado office. I  
11 manage all the sites in the Grants Mining District and other sites in Colorado  
12 and Wyoming. I have a good relationship with the tribes on three of the sites  
13 that I manage, the L-Bar site, the Laguna Pueblo, the Blue Water site, Yakima  
14 Pueblo, and the Riverton site, the Northern Arapaho and Eastern Shoshone.  
15 I am also DOE's representative for the Northeast Church Rock site.

16 On behalf of our director, Carmello Melendez and Deputy  
17 Director Peter O'Konski, who is joining this meeting virtually and the U.S.  
18 Department of Energy, it's great to be here in person after two long years of  
19 limited travel due to the pandemic. Slide, please. Today I'm going to talk a  
20 little bit about legacy management, the LM sites on Navajo Nation, and a little  
21 bit about Northeast Church Rock. Next slide, please.

22 LM was established in 2003 to manage the Department's  
23 long-term stewardship responsibilities for defense-related radioactively  
24 contaminated sites after environmental cleanup is completed by the  
25 Department of Energy, Office of Environmental Management, or in some  
26 cases, by private parties. We perform long-term surveillance and

1 maintenance activities at more than 100 sites nationwide. We perform -- I'm  
2 sorry.

3 From Alaska to Puerto Rico, our sites are as diverse as they  
4 are geographically vast, being located on Tribal lands, rural areas, and within  
5 urban towns and cities. DOE works closely with the Navajo Nation and other  
6 partners in our commitment to the long-term stewardship of these legacy sites.  
7 Next slide, please. There are four sites on Navajo Nation that LM is currently  
8 responsible for, as Ms. Haney mentioned earlier, Mexican Hat, Utah,  
9 Monument Valley, Arizona, Ship Rock, New Mexico, and Tuba City, Arizona.

10 I will provide information on these four sites along with the  
11 Northeast Church Rock, New Mexico site. I will also discuss work  
12 accomplished to date on our planned further work, Mexican Hat, Utah disposal  
13 site. In 2021, a collaborative working group or team was formed with  
14 representation from Navajo Abandoned Mine Lands, UMTRCA, Desert  
15 Research Institute, U.S. Army Corps of Engineers, and LM and its contractor.

16 At the Mexican Hat site, this team along with the Navajo  
17 Nation are working to evaluate the causes of the surface degradation and  
18 provide recommendations for future efforts that will help determine the causes  
19 and inform design of a long-term solution. In February 2021, the erosional  
20 piping characterization and data report was completed. The report presents  
21 results of geotechnical data collection and materials testing results from field  
22 work conducted in 2019.

23 In October 2021, a tour of Mexican Hat was conducted to  
24 investigate the surface degradation firsthand. This was done as part of a  
25 larger field tour to various Navajo AML sites, including the Skyline repository,  
26 and the Ts4tah sites. Therefore, in the coming years, DOE is planning to

1 develop recommendations based on input from the team, conduct additional  
2 geotechnical sampling, prepare alternative evaluation report to convey design  
3 concepts, develop long-term solution cover designs, and complete  
4 construction of a long-term cover solution.

5           At the Monument Valley processing site, annual  
6 groundwater monitoring was postponed in 2020 due to the pandemic but  
7 resumed in 2021. Well maintenance and redevelopment activities were also  
8 completed in 2021. LM worked closely with the Navajo Nation to understand  
9 the pandemic requirements.

10           LM's collaboration with Executive Director Shebala, Navajo  
11 Nation Division of Natural Resources greatly facilitated our work by  
12 establishing work protocols for mission essential work. The DOE National  
13 Lab Network collaboration for the Monument Valley site was conducted over  
14 a four-month period from October 2020 through January 2021. Members of  
15 the Navajo Nation Abandoned Mine Lands, UMTRCA, Navajo Nation  
16 Environmental Protection Agency, the Navajo Department of Water  
17 Resources, U.S. EPA, and the Nuclear Regulatory Commission participated  
18 in working group meetings.

19           Government leaders including the Oljato and Dennehotso  
20 chapter leaders and the Navajo Nation delegates were also invited to  
21 participate. A groundwater compliance action plan, the GCAP, is what we  
22 call it, work plan addendum was prepared in 2021 to include recommendations  
23 developed during the National Lab Network collaboration. So, over the next  
24 few years, DOE is planning to complete site characterization in support of the  
25 GCAP and develop and implement the GCAP.

26           Also, in 2023, we are planning to reconfigure the fence line

1 to open up more land for local use. (Translation of Native language spoken:  
2 Shiprock) For the Ship Rock disposal site, a GCAP work plan was prepared  
3 for review by NRC and Tribal agencies in March 2020. The GCAP work plan  
4 identified the need for additional data collection activities.

5 Collaborative meetings for the Ship Rock site occurred in  
6 April and May 2020 among DOE's National Lab Network, Navajo Nation  
7 agencies, NRC, and LM to evaluate our implementation of the GCAP work  
8 plan activities and propose actionable recommendations to reduce risk at the  
9 Ship Rock site. The working groups concurred in the activities proposed in  
10 the GCAP work plan and proposed additional site investigation, collaboration,  
11 and outreach activities to develop an end-state vision for the site. A design  
12 was prepared in 2020 and 2021, respectively, for a decommissioning and  
13 removal of the Many Devils Wash interceptor drain infrastructure.

14 A biological assessment and evaluation report was  
15 developed and approved for the planned decommissioning and removal  
16 activities. Thus over time, DOE is planning to decommission and remove the  
17 Many Devils Wash interceptor drain infrastructure, complete planning, and  
18 implement an interim treatment strategy to replace the current evaporation  
19 pond, complete site characterization in support of the GCAP, evaluate  
20 compliance remedy of alternatives, and prepare and implement a revised  
21 GCAP. (Translation of Native language spoken: Tuba City, AZ.) For the  
22 Tuba City disposal site, collaborative meetings occurred from April through  
23 July 2020 among DOE's National Lab Network, Tribal agencies, NRC, and LM  
24 to evaluate implementation of the Tuba City site GCAP work plan activities  
25 and propose actionable recommendations to reduce risk at the site.

26 As a result of these meetings, we identified data gaps and

1 data quality objectives and incorporated the actionable recommendations to  
2 address the gaps and to revise the GCAP. The groundwater remedy  
3 performance report was published in 2020, providing detailed evaluation of  
4 contaminate removal throughout the operational period of the groundwater  
5 treatment plan and the interim treatment system. In 2021, LM constructed  
6 quality control monuments needed as control points for the upcoming baseline  
7 aerial survey of the disposal cell cover.

8 DOE is planning to perform the baseline aerial survey,  
9 complete site characterization in support of the GCAP revision, evaluate  
10 compliance remedy alternatives, and prepare and implement a revised GCAP.  
11 Additionally, at each of the LM sites on the Navajo Nation, we will continue to  
12 perform annual inspections, conduct semiannual groundwater and surface  
13 water sampling and analysis where warranted, and perform required  
14 maintenance. These routine actions ensure existing remedies remain  
15 effective in protecting human health and the environment.

16 Also, we will continue to cultivate our valued relationship  
17 with our Navajo Nation agency partners and the Navajo Nation community,  
18 including performing educational outreach. Next slide, please. For the  
19 Northeast Church Rock site, LM collaborates with NRC and U.S. EPA about  
20 the Northeast Church Rock inactive uranium milling site as that site will  
21 eventually transfer to LM for long-term stewardship. The U.S. EPA-approved  
22 plan record of decision for United Nuclear Corporation's remediation of the  
23 Northeast Church Rock Mine under the Comprehensive Environmental  
24 Response, Compensation, and Liability Act includes the proposed placement  
25 of mining-derived waste rock on top of the existing uranium mill tailings  
26 disposal cell subject to NRC approval.



1                   After United Nuclear Corporation completes this work, LM  
2 will accept the transfer of the uranium mill tailings disposal cell for long-term  
3 stewardship. In closing, LM is committed to our continuing collaboration with  
4 the Navajo Nation and others. We have worked with our Navajo Nation  
5 agency partners for the past 20 years, and we look forward to using that  
6 experience in relationship to promote our shared values of protection of public  
7 health and the environment.

8                   Thank you for allowing DOE the opportunity to provide an  
9 update at today's meeting. And I'm happy to answer questions at the end.  
10 (Translation of Native language spoken: Thank you)

11                   CHAIRMAN HANSON: Thank you, Mr. Frazier, and I  
12 apologize. I think I said you were with the Office of Environmental  
13 Management. Of course, you're with the Office of Legacy Management.

14                   They did used to be connected I think at some point. So  
15 thank you for that. Next, we've got joining us remotely Ms. Stevie Norcross  
16 who's the Assistant Director in the Division of Waste Management and  
17 Radiation Control for the Utah Department of Environmental Quality. Ms.  
18 Norcross, the virtual floor is yours.

19                   MS. NORCROSS: Great. Thank you, Mr. Chairman,  
20 members of the Commission, President Nez, and the Navajo Nation, Director  
21 Shirley, Ms. Hood as well. Thank you for providing insight into your world,  
22 your culture, traditions, and ways of the Navajo people. That has been very  
23 impactful for me to hear as I'm sure it is for everyone else. Sorry. I had some  
24 background noise, so I think I fixed that.

25                   But thank you also to the fellow panelists that we have here  
26 as well. And so as Chairman mentioned, I'm Stevie Norcross, Assistant

1 Director for the Division of Waste Management and Radiation Control here in  
2 Utah. I'm here to talk about Lisbon Valley Uranium Mill here in Utah and  
3 some lessons that we have learned in working with this facility and site. Next  
4 slide, please.

5 Okay. So just before I get into discussing the mill itself, I  
6 did want to give some background on the work that Utah does and how we  
7 became the regulatory authority, in regards to uranium recovery program in  
8 Utah. So in 1984, Utah became an agreement state. And we did assume  
9 the regulatory responsibility for the control of radioactive materials.

10 But it wasn't until 2004 that we were authorized by the NRC  
11 to administer the uranium recovery program. And just briefly, I did want to  
12 acknowledge we have an excellent team out here in Utah. You can see here  
13 with some hydrogeologists, health physicists, and engineers, they're the boots  
14 on the ground in this program and they keep it running smoothly. I particularly  
15 wanted to point out Phil Goble, the program manager. Next slide, please.

16 So there historically has been eight uranium mills in Utah.  
17 Three of those mills are actually regulated by Utah. The first -- and this is the  
18 one that I'm going to be discussing in more detail today -- that's the former  
19 Lisbon Valley Mill.

20 It is owned and was operated by Rio Algom. It's currently  
21 in standby status. It was decommissioned with an embankment cover.  
22 However, we have -- and NRC also, came across some groundwater issues  
23 that we are still continuing to characterize with this mill.

24 The second is Shootaring Canyon Mill. It's owned by  
25 Anfield Resources Holding Company. This mill is also on standby status, and  
26 it's not currently -- there's no current activity at this mill.

1                   And then the third is White Mesa Mill. It is owned by Energy  
2 Fuels Resources Inc. This mill is active. This mill is actually the only  
3 conventional and active uranium mill in the entire United States.

4                   And then the other five mills that are former mills that are  
5 located in Utah. So we have the former Salt Lake Processing Site owned by  
6 Petrochemical. This we also call it the Vitro Mill. It is currently in Utah  
7 cooperator status.

8                   This means that we participate in annual inspections and  
9 some oversight, but DOE is the lead agency in regard to this facility. And this  
10 mill, tailings from it have actually been relocated to Clive, Utah.

11                  The second one is Green River. It is also in Utah operator  
12 status. We have Monticello. That mill is currently decommissioned. We  
13 have Mexican Hat, also decommissioned. And then there's the former Atlas  
14 mill site which we heard about a little bit today. It is currently undergoing  
15 some remediation and we're seeing some movement of those tailings --  
16 relocation of those tailings. Okay. Next slide.

17                  Okay. So here is a map of those mills or former mills that  
18 I've described. The pink pins indicate sites that are regulated by Utah. And  
19 then I have the green pins showing these DOE regulated or maintained sites.

20                  If you look in the bottom right-hand corner, it's the uppermost  
21 pink pin, that's the location of the Lisbon Valley Mill. And that's one I'm going  
22 to discuss in more detail. Next slide, please. So the former Lisbon Valley  
23 uranium mill, it's located three and a half miles southwest of La Sal, Utah.

24                  You can see that on the left map here. It's the pink pin.  
25 You can see the tailings impoundment. And it's located just off of State Route  
26 46 and U.S. Highway 191.

1                   It actually consists of two tailings impoundments. We have  
2 the lower tailings and the upper tailings shown here in the image on the right.  
3 They're differentiated by a difference in elevation, and then there is a bit of an  
4 unsaturated zone between those two tailings impoundments. Next slide,  
5 please.

6                   So Lisbon Valley mining and milling, it was really active from  
7 1972 to 1989. The ore was mined from the Chinle Formation on the northeast  
8 side of the Lisbon Valley Fault. Milling actually used an alkaline leach  
9 process in contrast to some of these acid leach processes that other mills use.  
10 And this mill produced over 13 million pounds of yellow cake between these  
11 years when it was active. Next slide, please.

12                   So as I mentioned, we did not have the regulatory authority  
13 over uranium mills in Utah until 2004. So prior to that, the NRC maintained  
14 the license for Lisbon Valley and this uranium mill. The NRC did discover that  
15 there was groundwater contamination.

16                   There was a plume. It was found sometime in the 1980s.  
17 In response to that, there was a corrective action plan that was put in place  
18 operated from 1990 to 2004. Evaluation of the results did show that  
19 unfortunately there wasn't really a decrease in the concentrations of the plume.

20                   So in response to that, Rio Algom submitted an application  
21 for an alternate concentration limit. And they requested that it be based on  
22 the groundwater modeling. Modeling did show that there was no predicted  
23 ACL exceedances for 200 years.

24                   So the NRC made these ACLs effective in a license  
25 amendment on July 6, 2004. This was just prior to the regulatory transfer to  
26 the state of Utah. And I did also want to mention that the upper and lower

1 tailings impoundment covers were approved by the NRC prior to our  
2 regulation.

3                   And by the time we took over regulation, they were almost  
4 completed. The lower impoundment cover was near completion and then the  
5 upper was completed at that point. Next slide, please. So Utah's regulatory  
6 oversight for the Lisbon Valley Mill, it began on August 16th, 2004.

7                   We issued a license to the mill on March 18th, 2005. And  
8 then in 2006, there was a license amendment where we required the ACLs  
9 the alternate concentration limits to be revised to better reflect the groundwater  
10 modeling that we had reviewed. 2010 to 2011, a number of wells began to  
11 exceed the ACL limits which is what we observed through groundwater  
12 modeling at these wells.

13                   In 2015, we requested a hydrogeological supplemental site  
14 assessment, an HSSA, to characterize the extent of the groundwater plume  
15 to get a better handle on it and be able to track it and see how far it's moved.  
16 In addition, there were a number of wells that were installed to assist with this  
17 characterization. There unfortunately were some wells that were present  
18 prior to decommissioning that were abandoned, so we didn't have the  
19 advantage of using those wells. But they were able to install some additional  
20 wells for us to look at and sample from. Next slide, please.

21                   So this image here shows the uranium plumes at the Lisbon  
22 Valley Mill. And you can actually see that there's two plumes that have been  
23 identified. There's one kind of down, a smaller plume in the bottom left-hand  
24 corner and then this larger plume.

25                   They both flow west to northwest. You can also see this  
26 kind of dotted line that creates kind of a rectangular square boundary around

1 the outside of where these plumes are sitting. So that's the long-term  
2 surveillance and maintenance boundary that was established by the NRC.  
3 Unfortunately, we have found that these plumes, or at least the northernmost  
4 plume, has exceeded this boundary. You can see at the very edge that it's  
5 just exceeding that boundary. Next slide, please.

6 So to continue the history with this mill, so we've continued  
7 to characterize and try to investigate these plumes. In 2019, a stipulation and  
8 consent agreement required that they provide us an updated Hydrogeological  
9 Supplemental Site Assessment report, it's the Phase 4 version, a background  
10 evaluation report, and an update defining the source of the plume which is  
11 obviously very important. We have been in conversations with the facility.

12 We've received this Phase 4 report, and we just received it  
13 this last fall. We've been reviewing it with them, and we have determined that  
14 the impoundment covers are actually the source of the continued growth of  
15 the plume. They're not preventing discharge of the tailings into the  
16 groundwater.

17 The cover from what we can tell, it doesn't appear that it was  
18 actually constructed according to the approved design. We can actually see  
19 some pooling of water that's occurring on top of the cover. And the pooling  
20 water creates infiltration, and then that goes down to the tailings and pushes  
21 it out and increases the growth of your plume.

22 So what's important and what's necessary is there needs to  
23 be cover repair performed. There needs to be continued mitigation and  
24 continuing groundwater modeling and sampling to assess this plume or the  
25 two plumes really. Go ahead. Next slide. So lessons learned, we broke  
26 these out into kind of two categories.

1                   One revolves around the ACLs that were set and the  
2 groundwater modeling, and the other is in regards to the cover design. So  
3 groundwater modeling in the actual measurements that you get from the wells  
4 when you go out there and do sampling, those go hand in hand. The models  
5 are informed by that empirical data that you're receiving, and they should be  
6 revised as you have more data and information. Revise them accordingly.  
7 It's an iterative process.

8                   ACLs, these alternate concentration limits, they must be  
9 established based on site-specific information. One example is the velocity  
10 of the water in the area may move faster or slower, right, depending on the  
11 site. The established limits must be conservative in order to protect the  
12 groundwater and in order to catch the plume and track it and see if it actually  
13 is continuing to grow.

14                  Wells are necessary to continue monitoring and ensure  
15 groundwater protection. They should be maintained and don't abandon wells  
16 until you are certain that they are no longer useful for future work. Or don't  
17 approve the abandonment of wells.

18                  And then on the cover design end of things, they must be  
19 built to prevent contamination. You have to turn off the source. So you have  
20 to have a slope on your cover design. And we highly recommend regulators  
21 are present during the cover construction so that they can ensure that it's built  
22 according to the actual approved design.

23                  That's what I have on Lisbon Valley. Thank you, everyone,  
24 for having me here. I'm virtual, but this has been an excellent meeting and  
25 I'm learning a lot. So thank you.

26                  CHAIRMAN HANSON: Thank you, Dr. Norcross. We will

1 finish up here with Bill Von Till who's the Branch Chief for the Uranium  
2 Recovery and Materials Decommissioning branch at the NRC. Bill?

3 MR. VON TILL: Thank you, Chairman. Good evening,  
4 Chairman Hanson, President Nez, Commissioners, Director Shirley, Ms.  
5 Hood, Mr. Frazier, Ms. Norcross, Ms. Crossley, and to the Navajo people in  
6 the room and online. My name is Bill Von Till. I'm the branch chief for the  
7 Uranium Recovery and Materials Decommissioning branch at the NRC.

8 There are many uranium mill tailing sites undergoing  
9 decommissioning in the United States. First, I will go through the status of  
10 remediation for the four sites on the Navajo Nation, then I will describe the  
11 status of the five NRC-licensed Title 2 sites that are currently undergoing  
12 decommissioning around the country. Next slide, please. This slide shows  
13 the location of the four UMTRCA Title 1 sites with respect to the Navajo Nation.  
14 As was mentioned before, these four sites are Ship Rock, Tuba City, Mexican  
15 Hat, and Monument Valley.

16 These four sites are one of the key focus areas in the Navajo  
17 Ten-Year plan for the NRC. This map also shows the location of several  
18 conventional uranium mill sites in decommissioning, and these sites are  
19 Church Rock, Ambrosia Lake, and Homestake. Next slide, please. This  
20 slide illustrates the location of the five NRC-licensed conventional uranium mill  
21 sites and decommissioning the 14 conventional uranium mill sites in  
22 decommissioning in agreement states as well as the 19 Title 1 and six 6 Title  
23 2 disposal sites that are transferred to the DOE for long-term care. As you  
24 can see most of these are in the western U.S. Next slide, please.

25 The four UMTRCA Title 1 sites on the Navajo Nation for  
26 those sites, our role is to ensure that DOE is complying with the standards in



1 10 CFR Part 40.27 which is consistent with 40 CFR Part 192. We routinely  
2 meet with the DOE on progress of actions and oversee DOE's long-term care  
3 of disposal cells. This slide shows the Ship Rock site which is currently  
4 undergoing groundwater remediation, and Bill gave a lot of detail on what's  
5 going on at that site.

6 The Tuba City site is also undergoing groundwater  
7 remediation. At the Mexican Hat site, we've been working with the DOE on  
8 issues related to repairs to the cover from erosion for the Monument Valley  
9 processing site. We've been in communication with the DOE related to their  
10 developing a groundwater compliance action plan.

11 The tailings at Monument Valley were relocated to Mexican  
12 Hat. So there's no disposal cell at Monument Valley. When major actions  
13 such as revised groundwater compliance action plans are submitted to the  
14 NRC for approval for any of these sites, we will consult with the Navajo Nation  
15 prior to making a decision. Next slide, please.

16 The staff have been actively participating in the Navajo Ten-  
17 Year plan since its inception. We will continue to consult with interested tribes  
18 on our actions, including any potential new license applications. The NRC  
19 staff continues to participate in Navajo Nation/Hopi, DOE quarterly meetings  
20 as well as the DOE-led Tribal intergovernmental relations group that develops  
21 written information for local communities on the DOE's legacy management  
22 activities.

23 As an example, in 2003, we participated in a technical  
24 working group face to face in Durango, Colorado with a Navajo and the Hopi  
25 to discuss groundwater actions at Ship Rock, Monument Valley, and Tuba  
26 City. Another example of outreach was during the 2014-2015 time frame

1 when we participated in knowledge transfer seminars at the Salish Kootenai  
2 College, Wind River Tribal College, Navajo Nations Dine College, United  
3 Tribes Technical College, and the Navajo Technical University at Crownpoint.  
4 The purpose of these outreach efforts was to share information on uranium  
5 recovery, radiation, radiation safety, National Environmental Policy Act, and  
6 the National Historic Preservation Act.

7           It also included demonstration of radiation protection  
8 equipment brought in by our Technical Training Center instructor. Tribal  
9 students and other Tribal members were all engaged in these sessions. Next  
10 slide, please. We also continue to engage in knowledge sharing and  
11 educational activities with other federal and Navajo agency representatives  
12 through the Community Outreach Network or Network.

13           The Network was formed in 2015 and coordinates outreach  
14 events to enhance community understanding on the work being done to  
15 address uranium contamination on the Navajo Nation. The NRC is an active  
16 member of the network and participates in collaborative projects as well  
17 individual efforts to build knowledge on radiation safety within the Navajo  
18 Nation such as sharing NRC online class material with the Navajo Technical  
19 University in Crownpoint. For example, we work the Technical University  
20 faculty to develop and share educational materials in support of expanded  
21 science, technology, engineering, and math course offerings at the university.

22           Even though it was hampered by the COVID pandemic, a  
23 lesson learned from the UNC Church Rock Amendment is the importance of  
24 early engagement with President Nez and especially the importance of in-  
25 person outreach and consultation with community members. Next slide,  
26 please. Two of our highest priority sites are the Homestake and UNC Church

1 Rock sites in New Mexico. The Homestake site pictured on this slide is  
2 undergoing active groundwater remediation.

3 The slide shows the large and small tailings piles, three  
4 evaporation ponds, and a reverse osmosis treatment facility. To keep local  
5 stakeholders informed, we have monthly virtual meetings to discuss the status  
6 of the site and to hear community concerns. Homestake is also an EPA  
7 Superfund site like the UNC Church Rock site, and we're in frequent  
8 communication with EPA Region 6 and the State of New Mexico about the  
9 activities of the site. And also DOE participates because they will ultimately  
10 take the site as well. Next slide, please.

11 Let me turn to the UNC Church Rock mill tailing site located  
12 near Gallup that was close to the community. And this afternoon, it's been  
13 discussed this a lot this evening. This slide illustrates the mill tailing site to  
14 the left or east and the Northeast Church Rock mine site to the west or right.

15 The evaporation pond in the middle of the tailings  
16 impoundment supports ongoing groundwater corrective action. And there is  
17 a groundwater compliance monitoring program. In its amendment request to  
18 relocate mine waste, UNC also included upgrades to stormwater control  
19 features around the mill tailings and improvements to the pipeline Arroyo.

20 The pipeline Arroyo is a drainage feature that flows near the  
21 tailings impoundment and can be seen in the middle of this photo and on your  
22 site tour as you were driving. Through the wind and dust, you may have been  
23 able to see it. Next slide, please. Next is the Sequoyah Fuel Site located in  
24 Gore, Oklahoma.

25 This slide shows waste being placed into an engineered  
26 disposal cell which is expected to be completed within the next 12 months.

1 This site also has groundwater contamination as a result of site operations.  
2 And the licensee has been performing groundwater corrective actions.

3 We expect to receive an alternate concentration limit  
4 application this summer from the licensee. On this site for any major actions,  
5 we will consult with the Cherokee Nation which their lands are nearby and  
6 coordinate with the State of Oklahoma. As Stevie mentioned this evening  
7 with the Lisbon Valley site in Utah, a lesson learned is the groundwater  
8 contamination of these sites must be better characterized and groundwater  
9 flow, fate, and transport models must be improved, especially for applications  
10 for alternate concentration limits which are a risk-based standard.

11 Groundwater is a precious resource and a thorough  
12 assessment is needed for this. The ANC Gas Hills site is located in Wyoming,  
13 is in a stable configuration with an interim cover and other engineering features  
14 to reduce erosion impacts. As discussed with the Commission, the ANC site  
15 does not currently have adequate funding to complete decommissioning  
16 activities.

17 We inspect the site to verify that this site remains safe.  
18 Additionally, we have routine calls with the Wyoming Department of  
19 Environmental Quality to discuss next steps for the site as we are working on  
20 funding options to complete site remediation and turn the site over to DOE for  
21 long-term care. The Rio Algom site located down the road near Milan, New  
22 Mexico is also in the final phases of decommissioning.

23 The licensee is working on a cleanup of windblown tailings  
24 and addressing the groundwater contamination. Once decommissioning is  
25 complete and remaining groundwater contamination has been addressed,  
26 license termination process will begin. We are currently working with EPA

1 and the licensee on comingled mine and mill waste in the vicinity of this site.

2 In closing, these sites have robust engineering controls,  
3 groundwater monitoring, inspections program. And the DOE in its role as  
4 long-term care custodian will be responsible for ensuring protection of human  
5 health and the environment in perpetuity. In this role, DOE's activities will be  
6 overseen by the NRC. This concludes my remarks this evening and  
7 concludes the panel, and I look forward to any questions you have. Thank  
8 you.

9 CHAIRMAN HANSON: Thanks, Bill, for that presentation.  
10 So many questions, so little time. I'm going to set a timer here so I don't  
11 completely get carried away.

12 I want to follow up a little bit on the conversation from the  
13 previous panel. And I'm not exactly sure who to direct this question to. So  
14 it's going to be kind of a combination of you, Bill Frazier, and maybe you, Stevie  
15 Norcross.

16 I'm interested in the potential availability of private disposal  
17 sites like Envirocare, Energy Solutions in Utah, WCS in Texas, U.S. Ecology  
18 in Washington State, et cetera, as potential destinations for uranium mill tailing  
19 waste. I think it was Dr. Norcross. You had said something about one of the  
20 sites and you had a thing on your slide.

21 One of the sites said the structures and the waste had been  
22 removed to the Envirocare facility in Clive. Did I have that right? And I guess  
23 -- I don't know which one of you wants to kind of start off on that. But I'm in  
24 interested in that as a potential path forward for some of these sites where  
25 either the environmental situation warrants that or other factors.

26 MS. NORCROSS: I'm happy to start with that question.

1 So yeah, that is correct. So the Vitro Mill tailings had been moved from the  
2 original mill site out to Clive, Utah. They're now maintained and contained at  
3 the Energy Solutions facility.

4 That is actually -- I can't say the specific year when that  
5 occurred. But that was actually the beginning of Energy Solutions. I can't  
6 speak to say 100 percent that that would be the proper site. And I also don't  
7 want to necessarily advocate for that as an option.

8 But if there was communication between probably the Tribe  
9 and you, the NRC folks, and Energy Solutions, if that became an license  
10 amendment request and they had the ability and the capacity to receive that  
11 waste, that would be something that we would review and determine whether  
12 or not that was acceptable. So it's a possibility. But I'm not necessarily  
13 advocating for it because that's not our role, right?

14 CHAIRMAN HANSON: No, I was curious more about kind  
15 of this, the general availability as a potential pathway and not specific to  
16 Envirocare, per se, but disposal -- private disposal.

17 MS. NORCROSS: Okay. I mean -- yeah.

18 CHAIRMAN HANSON: Yeah. Go ahead, Bill.

19 MR. FRAZIER: Okay. I just didn't know if there was more  
20 to add to that. But I can answer that in maybe a couple ways. When we  
21 have our Title 1 sites, we have the Grand Junction disposal site up in Grand  
22 Junction.

23 It's a Title 1 site. And as you know, we have that for  
24 abandoned mill sites before 1978. So we can accept materials from there.  
25 And by legislation we are directed to bring Title 1 materials to that location.

26 It's still open. It's the only open disposal facility that LM has

1 and it's in Grand Junction. It has about 250,000 cubic yards of available  
2 space.

3 But there's other things associated with that. It's just that it  
4 just can take Title 1 material by legislation. And if Congress -- congressional  
5 legislation can be altered with that, we can accept other materials, whatever  
6 that is -- how that's stated.

7 For our Title 2 sites, if there's other materials coming from  
8 our Title 2 sites, we cannot take it to the Grand Junction disposal site. So we  
9 have to take it up to Clive, Utah, which is very expensive. And to kind of relate  
10 that in a way, when we had our legislation coming to a head here this past  
11 couple years ago, the Grand Junction disposal site was dated to close in --  
12 pretty close.

13 And we had to alter the deadline for the Grand Junction  
14 disposal site another length of time so that we can continue to serve the Grand  
15 Valley community. The Grand Valley community up there, the Climax Mill  
16 was operating. And a lot of folks didn't know back then, but they utilize a lot  
17 of the material tailings for roads, for concrete material. Even women used  
18 them for their flower beds because I guess the roses were supposedly growing  
19 better.

20 So that was one area where we did a lot of cleanup.  
21 There's over 4,000 vicinity properties that were cleaned. And there's still a lot  
22 of material there.

23 And we do have a memorandum of understanding with  
24 Mesa County, the Grand Valley, that they really have a first choice of the  
25 material there. And if anything else comes to the Grand Junction disposal  
26 site that they have to be notified about that. So when we were getting close

1 to the deadline of having to get ready to close the site and put an engineered  
2 cover on it, we were looking at alternatives which was Clive, Utah.

3 And we have a clarifier at the City of Grand Junction that  
4 contains any vicinity property material that collects. And it's only collected  
5 during times of development. And sometimes some years there's no  
6 development, and it's a slow process.

7 And usually, we obtain about 3,000 cubic yards every three  
8 years. And those 3,000 cubic yards fill the clarifier. It's like an old sewer  
9 tank. And we calculated a delivery of 3,000 cubic yards to Clive, Utah and  
10 posed it to the community there. And it came up to, like, plus 18 million dollars  
11 just for 3,000 cubic yards.

12 And so that was enough to sway our senators in the state of  
13 Colorado to get legislation passed to extend the lifetime of the Grand Junction  
14 disposal site. So we now can serve the community for further vicinity property  
15 cleanup there. But any other alternatives, we'd have to go to a private facility  
16 that is very expensive.

17 CHAIRMAN HANSON: Yeah, thank you for that. That's  
18 an important context on both fronts.

19 MR. FRAZIER: And if I could, Commissioner.

20 CHAIRMAN HANSON: Please.

21 MR. FRAZIER: I'd like to extend the lifeline to my  
22 colleagues if I got any of that mistaken.

23 CHAIRMAN HANSON: You can phone a friend back there.

24 MR. FRAZIER: Yeah, phone a friend if I could, please.  
25 You could just verify that I was correct.

26 CHAIRMAN HANSON: For those of you maybe couldn't



1 hear on the internet, he got the high sign there that Bill got it right. So  
2 appreciate that very much. So okay, good. Thank you. Again, so many  
3 questions.

4 Bill Von Till, you mentioned right at the end we have  
5 oversight responsibility for a number of these former uranium mill sites. And  
6 of course, licensing actions like what we're looking at, at the Northeast Church  
7 Rock are really important. But you mentioned right at the end the inspection  
8 and the oversight. And I was just wondering if you could talk for a few minutes  
9 about the frequency and the substance of our inspection activities at these  
10 former sites.

11 MR. VON TILL: Certainly. Thank you for the question,  
12 Chairman. So first, the NRC has a well-established inspection program for  
13 the Title 2 sites like Homestake and UNC Church Rock mill site which are  
14 carried out by our Region IV inspectors. And we also include headquarters  
15 experts like hydrogeologists, geotechnical engineers if necessary for these  
16 inspections in accordance with our Inspection Manual Chapter 2801 which is  
17 for uranium recovery.

18 The frequency is a risk informed frequency and really  
19 depends upon site activities. It depends upon the risk of the sites.  
20 Homestake, for example, is twice a year. UNC Church Rock is once a year  
21 as an example.

22 For the sites like Bill was talking about, the Title 1 sites that  
23 have -- or Title 2 sites that have transitioned to the Department of Energy for  
24 long-term care, the NRC staff developed a risk informed or graded approach  
25 to verify that the sites remain safe and protective of public health. So once  
26 the specific license is terminated, we approve a long-term care surveillance --

1 a long-term surveillance plan. It's kind of like DOE's license with us, how they  
2 carry out their surveillance activities.

3           And so we developed a process called observational site  
4 visits where we go along with the DOE when they do their inspections and  
5 make sure that they're carrying out the activities in accordance with that long-  
6 term surveillance plan and to make sure that the site is safe, if there are any  
7 erosion problems, things like that, that would pique our interest. And that's a  
8 graded approach as well and can vary based upon the activities of the site and  
9 so forth, just as an example. The Blue Water site and the Mexican Hat site  
10 have some maintenance issues, and we want to do these visits more  
11 frequently.

12           Where sites maybe are in remote areas that don't have  
13 anything going on, it could be up to ten years at a time. So anytime between  
14 a few years and ten years for those sites. I hope that helped.

15           CHAIRMAN HANSON: Yea, that's very helpful. Thank  
16 you. I'm just about at the end of my time. I just want to make kind of one  
17 final note. Bill, I appreciate in your presentation I think you had some slides  
18 about some outreach to Navajo Technical University and other kinds of things.

19           For people who know me, I'm pretty passionate about  
20 capacity building with state and Tribal and international partners, particularly  
21 when it comes to things like health physics and materials inspections, and as  
22 you noted, uranium recovery. So I'd just like to reiterate our availability and  
23 our commitment to help Navajo Nation and other Tribal partners build their  
24 capacity to have those radiation protection and groundwater monitoring  
25 programs themselves and that they should feel free to reach out to any of us  
26 as they identify needs going forward. So with that, I'll hand it over to

1 Commissioner Baran.

2 COMMISSIONER BARAN: Great. Well, I'd like to get a  
3 better sense of the groundwater contamination issues and remediation efforts  
4 at the five former mill sites in and around Navajo. Bill Frazier and Bill Von Till  
5 maybe collectively you can answer this. Can you give us -- can you walk us  
6 through the extent of the groundwater contamination for the UNC mill site?

7 MR. VON TILL: So I think I can do that for that one.

8 COMMISSIONER BARAN: Okay.

9 MR. VON TILL: So the groundwater at the mill site was  
10 kind of created by the milling. And as time goes on, the groundwater  
11 continues to kind of decrease. But we have three plumes.

12 They were shown on one of the sides that Cathy had.  
13 There's one that goes to the north that we're watching especially because it's  
14 going towards Navajo Nation very slowly, very slowly. And then there's a  
15 plume to the south, and there's a plume to the west.

16 They're all pretty much contained to the site, maybe a little  
17 bit off the site. We have extensive monitoring to make sure that it's not a  
18 safety issue. And we're overseeing UNC on the corrective action. Now  
19 when it comes time for any major actions on that, we do want to engage with  
20 the Navajo, EPA, and the State of New Mexico with that. But that's the UNC  
21 Church Rock mill site.

22 COMMISSIONER BARAN: And what remediation  
23 activities are happening right now there?

24 MR. VON TILL: So what they're doing, that one slide that  
25 showed, I pointed out evaporation ponds, pump and treat. And as they do  
26 pump and treat over the years, some of the wells are drying up because the

1 groundwater is kind of decreasing in depth. But they continue to do pump  
2 and treat to keep -- to abate the plume from going forward towards Navajo  
3 Nation boundary to the north.

4 COMMISSIONER BARAN: Is there a time period after  
5 which that would eliminate the plume? Or it just slows the plume? What's  
6 the outcome we're looking for from that activity?

7 MR. VON TILL: So our regulations in our Criterion 5 and  
8 Appendix A requires corrective action down to standards. And the standard  
9 for that site is background. Now we've heard a lot about alternate  
10 concentration limits.

11 And sometimes when the licensee pumps and pumps and  
12 pumps and gets to asymptotic levels, they may say, we can't get it any further  
13 than that. And we want to apply for a risk-based standard that we feel is safe  
14 with a point of exposure or the property boundary. And sometimes that  
15 happens, but we're not there at this site. So they have to keep going for the  
16 standard of background at this site.

17 COMMISSIONER BARAN: And how long is remediation  
18 expected to take?

19 MR. VON TILL: It's really unknown. Sometimes people  
20 say, oh, it's ten years, and then it's ten years. Groundwater remediation is a  
21 very inexact science. And so we continue to track it. But most of all, we  
22 continue to track the safety of a situation, the groundwater monitoring network  
23 to make sure it's not a safety issue. And the pumping abates the movement  
24 of the plume.

25 COMMISSIONER BARAN: And is there other practical  
26 ways to accelerate that remediation?

1 MR. VON TILL: Sometimes more pumping. Sometimes  
2 other practicable technologies. People have looked at bioremediation.  
3 Stevie mentioned -- or somebody bioremediation. Sometimes that's been  
4 looked at, at some of these sites.

5 But pretty much sometimes more pumping. Homestake,  
6 for example, they added an evaporation pond number 3 to try to speed up the  
7 cleanup. They added a reverse osmosis unit, so more treatment and more  
8 pumping sometimes.

9 COMMISSIONER BARAN: And is the groundwater  
10 situation similar at Tuba City, Ship Rock, Monument Valley, and Mexican Hat?

11 MR. VON TILL: I'll start off --

12 COMMISSIONER BARAN: That's a lot in one question.

13 MR. VON TILL: So first one thing, we collaborate with  
14 Department of Energy on what are the highest risk sites. And for example,  
15 Ship Rock is one of those because the extensive groundwater contamination  
16 there. So we want to watch that more carefully.

17 And DOE has been working on a groundwater compliance  
18 action plan that we approved with consultation with the Navajo Nation. But  
19 they're taking a hard look at that, Tuba City doing the same. And I'll let Bill  
20 take it from there on that.

21 MR. FRAZIER: Yes, Mr. Chairman. I'd like to kind of defer  
22 to my lifeline if I could on the groundwater at Ship Rock if I could.

23 MR. KAUTSKY: Do you want me to come here and speak  
24 in the mic?

25 CHAIRMAN HANSON: Yeah, that'd be great. I think that  
26 would make sense so that people can hear and we can make sure we capture

1 it on the transcript.

2 MR. FRAZIER: Thank you, Mark.

3 MR. KAUTSKY: Thank you, Bill. Thanks for calling me  
4 up. We've been treating groundwater at the Ship Rock site since about the  
5 year 2000. And we're using pump and evaporate in that particular case.

6 So we're using a large evaporation pond. And originally  
7 when we designed that system, we thought that we'd be probably pumping for  
8 a period of about 20 years. Well, here it is, 2022.

9 And the way the pond was designed, we have an  
10 evaporation pond, it had a liner on it. And it was designed with about a 20-  
11 year life on it. And so we still have more pumping to do.

12 But we're finding that our evaporation pond needs another  
13 liner on it if we're going to continue using it. So we're looking for more  
14 innovative ways to treat the groundwater contamination out there where we  
15 would not be necessarily using the evaporation pond anymore. We're using  
16 an ex situ, in other words, above ground treatment and then allowing that water  
17 to infiltrate down in the ground to accelerate using clean water, the flushing  
18 process so it accelerates.

19 We've made tremendous strides in the cleanup there. We  
20 had a nitrate plume, for example, and it shrunk maybe by a factor of ten. Just  
21 it's really, really gotten a lot more compressed.

22 So we're down to a point now we got some cleanup to do,  
23 some targeted areas that we're looking at. And same things goes true for  
24 remnant uranium plumes. We have some additional cleanup to do, and we're  
25 looking at accelerating that with using this ex situ or above ground treatment  
26 and then allowing that water to infiltrate to accelerate that process.

1                   And it gets us out of the business of having to rely on relining  
2 every 20 years. That's an expensive process. We're fortunate under Title 1  
3 that we have a disposal cell we can take the sludge and so forth that  
4 accumulates in that pond.

5                   And we can dispose of it up at the Grand Junction disposal  
6 site. If we did not have that and if the life of the disposal site was no longer  
7 with us here, we'd have to take that material to Clive, Utah or some other  
8 place. And that's an expensive proposition.

9                   So just kind of answer the question, it's similar to what Bill is  
10 describing with Homestake. They're going to continue using pump and  
11 evaporate. We've -- ours is not the same kind of prolific aquifer, the situation  
12 that they've got over there. It's a lot smaller in scale.

13                   So we've made a lot quicker progress perhaps than what  
14 they are using and getting at there. But we're in the middle of an  
15 environmental assessment process to -- that we need to go through the NEPA  
16 process to do that. And all that stuff takes time.

17                   Need to make sure that we -- like in this particular case,  
18 truckloads of material that get hauled off from Ship Rock have to go through  
19 the community of Ship Rock on their way up to Grand Junction. We're  
20 estimating a couple thousand truckloads of material that's going to head up  
21 that way. That puts us into a situation we're hauling it through a community.  
22 We want to make sure we're aware of what those risks are and so forth of  
23 taking and doing it in a way where it's safe and that the public is protected.

24                   COMMISSIONER BARAN: Great. Well, thank you for  
25 joining our panel. Thank you for the update. And I'm encouraged to hear  
26 that there's some innovation in this area because I think kind of when I was

1 looking at this maybe a decade ago it just seemed like some of these sites  
2 were struggling to get out of a multi-decadal kind of remediation situation. If  
3 we can accelerate it at some of these locations, that would be a really  
4 important bit of progress. So thank you. I'll stop there, Chairman.

5 CHAIRMAN HANSON: Thanks, Commissioner Baran.  
6 Commissioner Wright?

7 COMMISSIONER WRIGHT: Thank you, Mr. Chairman.  
8 The disadvantage of going last is that a lot of your questions get asked and  
9 answered, at least addressed. And so I don't have a lot that I'm going to ask.

10 But John Lubinski, I want to come to you real quick. In your  
11 presentation, you had the two different kind of designs for cover designs. And  
12 my understanding I think it was the -- if approved that the Church Rock site  
13 would have the one with the evapotranspiration vegetative cover. Is that what  
14 --

15 MR. LUBINSKI: We stick with ET. It's easier to say.

16 COMMISSIONER WRIGHT: ET, yeah, yeah. So I'll do  
17 that too. Is the staff getting a sense of whether and how many old resistive  
18 covers used at UMTRCA sites may someday have to be replaced by the new  
19 ET covers?

20 MR. LUBINSKI: Yeah, thank you for the question,  
21 Commissioner. We are looking at the ET covers because we believe that is  
22 an innovation going forward. And working with DOE and Bill, if you want to  
23 add to this, we are noticing over time some degradation of covers, both at Title  
24 1 and Title 2 sites that DOE has.

25 As part of the mill site at Church Rock, that was one of the  
26 reasons for engaging with DOE so early on this was to make sure that the



1 lessons learned they had and that they were seeing at existing sites and  
2 covers that we could address that in making our decision about whether to  
3 approve the license amendment to bring the waste on site because again it  
4 would be used as part of the cover system. And there was a lot of good  
5 technical exchange between DOE and the NRC on what they had learned that  
6 helped us engage with UNC to ask questions through RAIs to help improve  
7 that application.

8                   So we do think over time some of the older covers will need  
9 to be replaced, and we think ET covers will be the most likely way to go. NRC  
10 is also doing research in that area. And we know DOE is doing research on  
11 the ET covers as well. But Bill, did I characterize that correctly?

12                   MR. FRAZIER: Yes, John. Thank you very much. That  
13 was really good. And that's a good point. We do have our sites that we  
14 oversee and we maintenance them. But as you know now, there's a few sites  
15 like Mexican Hat and like Blue Water that we're having to do some further  
16 repairs.

17                   Our main assignment is just to maintenance these places.  
18 But we're finding some of these covers are supposedly supposed to last 1,000  
19 years and at least 200. But now we're only, like, 25 years into this clock and  
20 we're finding issues with some of our covers.

21                   So now it's great. Like you said, like on the Church Rock  
22 site, we're being involved early. We're collaborating, and it's really good.  
23 We're at the table to kind of talk about these designs, and the ET cover is kind  
24 of a great innovation.

25                   A lot of our sites are naturally progressing through the nature  
26 of how things evolve with more plants and weeds and things like that naturally

1 taking over a lot of these rock covers so that we're finding that our costs go to  
2 maintenance of these weeds and things like that, trees that we have to spray  
3 to kill. So to cut back on our costs for things like that, we're looking at -- some  
4 of our research groups are looking at how we can find out if the natural  
5 processes of these sites with windblown materials. Like, today, we get dust  
6 storms and things like that.

7                   And eventually, this dust and these sand particles get into  
8 the rocks -- these rock covers. So they change over time. They're not the  
9 same. We all know that. As Navajo people, everything adjusts over time,  
10 and you have to adapt and work with that as we know.

11                   So we're finding ways to see these covers kind of evolve.  
12 So these ET covers are really kind of an innovation. And John and our staff  
13 are working together in coming up with these new ways to watch and caretake  
14 our sites and keep it safe for public health and the environment.

15                   COMMISSIONER WRIGHT: Thank you. Thank you for  
16 that response. And Mr. Chairman, before I turn it back over to you, I just want  
17 to take a second and thank everybody for the last couple of days. I have been  
18 exposed to a lot, and I've had a lot of information that's been sent my way.

19                   I've done my best to listen and to hear and to try to digest  
20 and understand. I do recognize that this is one of these topics where we've  
21 heard the word innovation twice. I think we've got to think outside of the box  
22 on some of the solutions here.

23                   I think probably the solution that's going to come to pass  
24 here may not even be talked about yet. So I think an event like this, coming  
25 here and having the people at the table who are at the table and the people  
26 we've met with today is a good start. And with that, I'm going to yield my time

1 so that if President Nez or anybody else would like to address anything or use  
2 it in their closing comments, they may, if that's okay with my fellow  
3 Commissioners.

4 CHAIRMAN HANSON: Sure. Thank you, Commissioner  
5 Wright. If it's okay, I'll -- Commissioner Baran, if you've got any closing  
6 remarks you'd like to make?

7 COMMISSIONER BARAN: Sure. Well, I have a similar  
8 takeaway. I appreciate the productive dialogue we had this evening and  
9 earlier today and, you know, it's clear we need to take Navajo's concerns  
10 seriously. Their -- Navajo is best positioned to know what their own interests  
11 are, and we have to respect that, and we need to take those concerns  
12 seriously, and we need to think creatively about solutions. We need the  
13 federal agencies and Navajo to think through all the options together, I think.  
14 There's a lot of work to do, and I think we need to work together to get it done.  
15 Thanks.

16 CHAIRMAN HANSON: Thank you, Commissioner Baran.  
17 Mr. Crossley, I didn't want you to feel left out -- you didn't get a -- you came all  
18 this way from Eastern Washington and you didn't get any questions, and I  
19 didn't want you to feel like we weren't interested in what you had to say. I  
20 thought your discussion of alternative concentration limits was really  
21 enlightening and helpful. I debated fiercely internally whether to kind of  
22 pursue a line of questioning around ACLs, but I think your presentation was  
23 particularly helpful when you have a strong technical capability in a tribe and  
24 how that tribe can engage with the regulator proactively and constructively on  
25 issues regarding the performance of a licensee. And I thought the technical  
26 data that you provided was really interesting about some of the independent

1 analysis that the tribe has done and how that's contributing to the regulatory  
2 process. So really appreciate your coming down here and just appreciate the  
3 dialogue across the board.

4 I'll reiterate the -- our -- the commitment that I hope folks  
5 have seen here today among my colleagues and myself to the NRC's mission,  
6 which is ensuring the protection of people and the environment and that we  
7 are committed to ensuring that any proposed solution, whether with DOE mill  
8 sites or those on or adjacent to Navajo lands are protective of public health  
9 and the environment. And we're committed to an open and transparent  
10 communication and process about our decision making going forward, and I  
11 think -- I hope folks understand that. I think by our willingness and our  
12 openness and, in fact, our enthusiasm for coming out here to New Mexico.

13 We strongly value the government-to-government  
14 relationship we have with the Navajo Nation and the other tribes throughout  
15 the West and we understand how difficult and fraught this issue is of uranium  
16 mining and milling. We recognize the tremendous sacrifice that the Navajo  
17 Nation has made for the security and prosperity of the United States. And I  
18 think that long history has to be recognized and honored and taken into  
19 account as we all move forward together; right? I want to echo Commissioner  
20 Baran's remarks about working together as we go forward.

21 I also want to recognize I think we heard a lot today about  
22 timing and about the urgency and about, you know, the burdens that local and  
23 native people face through ongoing and chronic exposures. And so there is  
24 literally no time to waste on some of these things. We want to recognize that  
25 all.

26 So again, thank you all very much. I do want to make just

1 one quick housekeeping note. We will have a transcript available after the  
2 meeting in both English and in Dine. It'll be posted, I think, on the NRC  
3 website at some point in the coming days. And with that, I'll offer it to  
4 President Nez to make any closing remarks.

5 PRESIDENT NEZ: Thank you, Chairman, Members of the  
6 Commission, and the panelists and everyone that's still here at 10:46. And I  
7 appreciate everyone taking the community seriously, the Red Water Pond  
8 Community.

9 You know, as we move forward, you know, and with the  
10 second panel -- well, first and second panels, we learned a lot, right. I think  
11 Bill alluded to this, you know, a little while ago is I don't think every place where  
12 you cover up, clean up the uranium is 100 percent safe.

13 You know, I understand just from my briefings as the  
14 President of the Navajo Nation, you know, I've got some issues with Ship  
15 Rock. You got issues with Tuba City. And these are places where the land  
16 is shifting down into the waterways and to San -- for Shiprock, it's to San Juan  
17 River basin; for Tuba City, it's the Moenkopi Wash. And, you know, even  
18 though we say that maybe we leave it there and cover it back up, you know,  
19 there still may be some issues in the future. And you heard from the  
20 community here. They just want it out and we agree with that.

21 I appreciate, Chairman, you honoring the government-to-  
22 government relationship through our treaties, Treaty of 1868. We mentioned  
23 that today at the meeting and our people still honor that sacred agreement to  
24 this day, you know. We utilized their language to help win battles. We  
25 helped win the war. You heard from many veterans today as well. They  
26 honor that agreement. That agreement said we would help each other out,

1 and I think Navajo Nation has honored that agreement to this date. And we  
2 just need the United States Government to fulfill those promises as well to help  
3 our Navajo people.

4 I do see this as a positive step, NRC, Director Shirley of the  
5 Navajo Nation EPA asking the NRC to come to Indian Country, and we even  
6 said come and visit the community. And I was surprised that the NRC agreed  
7 to that. They -- you don't do that but you did it today, and I appreciate it. And  
8 I know that this Administration, the Biden-Harris Administration is a whole new  
9 team with a different outlook in Indian Country. So you got to have hope in  
10 this position, especially being the President of one of the largest -- the largest  
11 nation in the country, right, 404,000 enrolled members. Checks are in the  
12 mail, by the way.

13 (Laughter.)

14 PRESIDENT NEZ: Don't ask me. That's an inside joke for  
15 my Navajo relatives here -- and 27,000 square miles of land. And the  
16 commitment -- I just want to let the Navajo people know that the commitment  
17 by this Administration, the U.S. EPA, Michael Regan, was also here on the  
18 Navajo Nation, was a part of the Navajo Nation. The Secretary of Energy,  
19 Secretary Granholm was here twice on the Navajo Nation just recently, last  
20 week, to see the solar project in Kayenta, and now the NRC. And I think a  
21 dialogue needs to continue with the U.S. EPA, the NRC, the Department of  
22 Energy including our Navajo Nation EPA. And we do have some very  
23 competent and highly educated folks that work for our Navajo Nation EPA, and  
24 I support them and I see some great things happening out of this meeting  
25 today. So thank you, Chairman. We welcome you back, not just in the  
26 capacity of NRC, but even vacation. You know, we have one of the most

1 beautiful lands in this country, in the world. And I thank you. (Translation of  
2 Native language spoken: And to you my relatives and my people, you've heard  
3 a lot of new information. However, we discussed this information in the  
4 English language this evening. The Chairman sitting beside me has gathered  
5 our Navajo comments. During this meeting, the Chairman has expressed his  
6 interest to take this material and information he'd need to begin the  
7 examination. The White House Federal Government, President Mr. Biden,  
8 on behalf of his administration, we received the top Agency leaders and staff.  
9 NRC Commissioners have come here to see first-hand the issues we are  
10 concerned about. You have been heard my relatives and I'm very thankful to  
11 you. God be with you.) Thank you and God Bless you all. Have a safe trip  
12 back home. Thank you.

13 CHAIRMAN HANSON: Thank you. With that, we're  
14 adjourned. Thank you all.

15 (Whereupon, the above-entitled matter went off the record  
16 at 10:53 p.m.)