U. S. Nuclear Regulatory Commission

Draft Environmental Impact Statement for the Disposal of Mine Waste at the United Nuclear Corporation Mill Site

Radio Broadcast – Questions and Answers

Introduction

Good Evening, my name is Christine Pineda and I work for the United States Nuclear Regulatory Commission, or NRC. This is the third of three broadcasts this week about a proposal by the United Nuclear Corporation to excavate mine wastes from the site of the former Northeast Church Rock Mine and place those wastes for permanent disposal in a repository on top of an existing uranium mill tailings impoundment at the nearby Mill Site that is owned by United Nuclear. We encourage you to review our draft Environmental Impact Statement, or EIS, for this project. The EIS describes the potential environmental impacts of this proposal. We are seeking your comments on our EIS now through May 27 of this year. During this evening's broadcast, we'll answer many of the questions we have heard from the public and the local community over the last few months. Some of these questions relate to the NRC's draft EIS or to our safety review and others pertain to areas that fall under the authority of the United States Environmental Protection Agency, or USEPA.

At the end of this broadcast, we'll let you know how you can comment on the draft EIS.

USEPA Actions and Authority

Question: Can the Northeast Church Rock mine waste be moved far away?

Answer: The answer to this question is not simple and requires some explanation. First, the NRC does not have the authority to determine how to manage the mine waste, beyond deciding whether United Nuclear's request to place that waste on the Mill Site can be done safely. The USEPA is the agency who has the responsibility to determine how the mine site should be cleaned up and what should be done with the waste. The EPA made its decision after several years of evaluation, investigation, public input, and consultation with stakeholders, including the Navajo Nation. After becoming involved in the mine site cleanup in 2005 in response to a request by the Navajo Nation, the EPA conducted investigations and collected data to evaluate possible alternatives for the cleanup. In 2009, the EPA presented five alternatives, including moving the waste far away, for managing the waste in a report called an engineering evaluation and cost analysis. This report evaluated the five alternatives using three criteria: effectiveness, implementability, and cost. The report describes the elements of these criteria and explains how EPA applied them in looking at the five alternatives. After considering the results of multiple investigations, in 2011, the EPA presented its decision to move the mine waste to the mill site, stating that this cleanup plan would address human health and environmental risks while also being safe to implement and cost effective. This plan also would remove the waste from Tribal trust lands. This approach would also involve separating and shipping mine waste that contains higher concentrations of radioactivity to an EPA-approved disposal or reprocessing facility.

Question: Where are the responses to comments the local communities provided to the USEPA during the public comment period before the EPA made its decision to move the mine waste to the mill site?

Answer: The USEPA held public comment periods for its 2011 and 2013 decisions related to how the mine waste should be managed. The 2011 document is the called the "Action Memorandum" and applies to the mine site. The 2013 document is the "Record of Decision" for the mill site. Both of these decision documents contain sections called "responsiveness summaries," in which the USEPA summarizes and responds to comments that were made by the public. This document is located on EPA's Northeast Church Rock website at https://www.epa.gov/navajo-nation-uranium-cleanup/northeast-church-rock-mine under "Records of Decision." You can also contact us and we'll assist you in obtaining these documents – we'll let you know how to contact us at the end of this broadcast.

Question: Is shipping all the mine waste to another location considered as an alternative in the NRC's draft EIS?

Answer: Yes, in part. This is because the NRC would not have a role in any disposal alternative that does not involve an NRC-regulated facility. The EIS takes account of this possibility in its No Action Alternative, which is described in Section 2.2.2 of the draft EIS. In the draft EIS, no action means that the NRC would deny United Nuclear's request to place the mine waste on the mill site. The EIS assumes, in this case, that the mine waste would need to stay in place on the mine site for at least another 10 years while the EPA determines what should be done with the waste. The draft EIS assumes that, after this time, the waste would be capped in place or disposed of at a site other than the United Nuclear mill site. But the draft EIS does not speculate about where the waste would go.

Question: Why can't residents of the Red Water Pond Road Community move to the Standing Black Tree Mesa?

Answer: Housing options for the residents of the Red Water Pond Road Community are beyond the NRC's regulatory authority. The USEPA has the lead for the voluntary alternative housing program available to the members of the Red Water Pond Road community who would be affected by this project. The EPA has stated that there are significant barriers to providing housing on the Standing Black Tree Mesa related to providing "decent, safe, and sanitary" housing. To provide housing, the EPA needs to ensure the housing meets the federal standards for decent, safe, and sanitary conditions. After looking into this option, the EPA determined that providing water, power, and road access to the Mesa would be highly challenging. In addition, the Navajo Tribal Utility Authority has stated that bringing water to the Mesa is not feasible. Approvals from other branches of the Navajo Nation government would be required as well, and these processes would be complex. These actions would likely require several years to complete and would not allow for people to move before the cleanup begins in 2023.

Mill Site Impoundment and Proposed Mine Waste Repository

Question: How much mine waste would be moved to the mill site?

Answer: United Nuclear Corporation is proposing to transfer approximately 1,000,000 cubic yards of waste from the Northeast Church Rock mine site and dispose of it within the footprint of the tailings disposal area at the mill site. After the waste is in place, United Nuclear proposes to

add an earthen cover consisting of 430,000 cubic yards of soil and 60,000 cubic yards of rock. The cover would have native plants seeded on it and would protect the environment from radiation and protect the impoundment from rainwater.

Question: Would the weight of the added mine waste and the cover cause the mill tailings impoundment to cave in?

Answer: One of the major areas of the NRC staff's safety review of United Nuclear's proposal was how the existing impoundment would handle the added weight of the mine waste and the soil and rock cover that would be placed over the mine waste. The NRC staff reviewed the current conditions in the impoundment and the proposed changes from adding the mine waste. We evaluated the characteristics of the mill tailings, the amount of water present in the tailings, and how the impoundment cover and slopes affect water movement. We also assessed the changes United Nuclear is proposing. For example, we looked at how the proposed cover would use soil, rocks, and vegetation to store water and release it back into the air rather than let it infiltrate. We also evaluated whether the mine waste repository slopes would be stable and protected from erosion. The NRC staff also reviewed how settlement could change the overall shape of the impoundment, and whether this would affect groundwater or cause pooling of water on the surface of the mine waste repository. The NRC staff concluded after this review that the mill tailings impoundment would safely isolate the mill tailings with the added weight of the mine waste.

Question: Will radiation or radioactive material from the mill site get into the water supply or into the rainwater runoff?

Answer: Radioactive material could get into the groundwater if it is carried down through the impoundment by rainwater. However, protection from water is another major area of the NRC staff's safety review, and it is closely related to our review of the structural aspects I discussed a few minutes ago. The radon barrier cover on the mill tailings impoundment and a series of channels are designed to divert water away from the tailings so that water does not get into the impoundment. United Nuclear would keep the existing radon barrier, place the mine waste on top of the barrier, and then add an additional radon barrier and evapotranspirative cover on top of the mine waste layer. The evapotranspirative cover is a soil and rock mixture with vegetation and is designed to prevent water from ponding or infiltrating into the ground. The NRC staff determined that the mill tailings and mine waste would be protected from rainwater by the cover, by the existing and proposed new channels around the perimeter of the repository, and by other proposed erosion protections. In addition, the NRC staff determined that a minimum 5-year period of observation should be required after the mine waste is in place. This observation period would verify that the drainages at the site would perform as designed during storms.

Earthquakes

Question: How would the mill tailings impoundment and the proposed mine waste repository be affected by a major disaster such as an earthquake?

Answer: The NRC staff reviewed a robust range of natural hazards in evaluating the safety of the proposed repository, including the impact of earthquakes. After studying the regional earthquake faults, geology, and historical earthquakes recorded in the area, the NRC staff determined the mill site is not near a fault that would produce an earthquake large enough to cause significant damage to the repository.

Mine Waste

Question: What will be done with the highest concentration waste from the mine site?

Answer: The highest concentration waste at the Northeast Church Rock Mine Site is waste that exceeds 200 picocuries per gram of radium-226 or 500 milligrams per kilogram of uranium. Four areas on the mine site were identified that contain this higher-level waste. Before removing other mine wastes, United Nuclear would excavate and remove the highest concentration waste and place it in a designated storage area until it can be shipped offsite. This waste would not be disposed of at the Mill Site. Instead, United Nuclear has proposed to ship it to a processing facility or to a disposal facility approved by the USEPA. The decision as to which facility the highest concentration waste will go to for disposal will be made when the mine site cleanup begins. Because the highest concentration waste will be handled separately under the authority of the EPA, its disposal is not part of the NRC staff's review for the Mill Site. Section 2.2 of the draft EIS provides more information about this type of waste.

Surface Water and Erosion

Question: Why is a new stormwater control being proposed for the Pipeline Arroyo? How will it be constructed, and how will it prevent erosion and another collapse of the mill tailings impoundment? How will the maintenance and safety of the new structure be ensured over the long term?

Answer: Because the current jetty structure in the Pipeline Arroyo is eroding, United Nuclear has proposed to replace the jetty with a riprap, or rock, chute in the Arroyo. The proposed improvements are designed to convey water through the arroyo and away from the tailings impoundment, while also preventing scouring and erosion of the Arroyo soils. The NRC staff reviewed this aspect in detail in its safety review. For example, we assessed the potential for erosion and reviewed United Nuclear's proposed erosion control measures. We also reviewed factors such as whether proposed slopes and embankments could resist the maximum anticipated flow of water. We reviewed details of the proposed riprap chute; the use of appropriate rock sizes, shapes, and durability; and the potential for sediments to build up. In addition, the NRC staff determined that a minimum 5-year period of observation should be required after the mine waste is in place. This observation period would verify that the arroyo improvements and drainages at the site would perform as designed during storms. This condition would also require that United Nuclear repair any damage, determine if changes are needed to improve flood and erosion protection, and determine what actions are needed and estimate the costs of those actions before the site is transferred to the Department of Energy, or DOE, for long-term care. The NRC, USEPA, and DOE are working to ensure that the site would be safely maintained under long-term DOE stewardship.

We have heard that many people are concerned that there could be another release from the United Nuclear Mill Site similar to the 1979 spill. At that time, there were large ponds onsite that were filled with liquid tailings, and millions of gallons of these liquid tailings are what were released into the Arroyo when the spill occurred. Since there are no longer liquid tailings stored at the mill site, there is no chance that a similar release of that type could occur. As I just noted, the new stormwater controls in the Pipeline Arroyo are designed to prevent erosion. The NRC is requiring monitoring of the performance of the Pipeline Arroyo to make sure these controls are working properly.

Question: Here are several questions about the evaporation ponds that are currently on the Mill Site: What is in the two evaporation ponds? What protections and signage exist for the ponds? What is the mist that is sometimes seen over the ponds?

Answer: The evaporation ponds are being used as part of the ongoing groundwater cleanup activities that the USEPA is overseeing. The groundwater was contaminated by years of wastewater seepage from mill tailings into the groundwater. Groundwater is pumped into these ponds and there it evaporates, leaving the uranium and other milling contaminants in the lined bottoms. The current groundwater evaporation ponds are different from the historical tailings ponds. The tailings ponds in place during milling operations held hundreds of millions of gallons and contained highly contaminated tailings. The current groundwater evaporation ponds are very small compared to the old tailings ponds, which have been drained and closed. The water in the evaporation ponds is mostly clean groundwater to keep the pond liners from drying out. A very small amount of the water is from contaminated groundwater, because the wells only produce about 1/2 gallon per minute. Once the groundwater corrective action plan is complete and the groundwater has been restored to acceptable limits, the ponds will be closed and capped in place.

With respect to protection and signage for the ponds, the perimeter of the Mill Site is fenced to exclude livestock and prevent grazing. All fencing is posted with "No Trespassing" signs. The ponds are also marked with signs indicating they are a restricted radiation area.

With respect to the mist over the ponds, because the pond water is meant to evaporate, fog or mist above the ponds may be visible from time to time. This is a natural process that occurs when air that is cooler than the water condenses moisture evaporating from the pond surface and that moisture becomes a fog or mist.

Long-Term Stewardship of the Mill Site

Question: Who is responsible for managing the mill tailings after the mine waste is moved?

Answer: After United Nuclear completes all activities that are required under the NRC license, including completing the current groundwater cleanup activities and other site closure activities, the tailings impoundment would be transferred to the DOE's Long-Term Surveillance and Maintenance Program. The NRC, DOE, and EPA are working together to ensure the site would be acceptable for transferring ownership from United Nuclear to DOE, to ensure that the site would be well-monitored and maintained to protect future generations, and to ensure that enough money would be available to pay for long-term maintenance. Transfer of the Mill Site to DOE is still many years away and cannot occur until all site closure activities are complete and the NRC finds that the site meets all applicable requirements.

Land Use

Question: When will the local residents be able to raise livestock on the land at the Mill Site?

Answer: The Mill Site is owned by United Nuclear, who will need to make a decision about whether certain portions of the site could be used in the future for livestock grazing. Currently, the property is used for the groundwater cleanup infrastructure, administrative buildings and the covered impoundment. It is unlikely that the covered impoundment itself would ever be available for grazing, because the vegetation needs to be maintained on the cover. The NRC staff will note in its final EIS that United Nuclear consider allowing local residents to use portions

of the Mill Site for livestock grazing, when available. This text will be added to a table in Chapter 6 of the draft EIS that provides a list of mitigation measures proposed by members of the Navajo Nation.

Transportation

Question: Will United Nuclear be using a conveyor or trucks to move the mine waste? Will the mine waste be taken across Highway 566?

Answer: United Nuclear is proposing to use trucks to move the waste on a haul road that would cross Highway 566. United Nuclear also considered using an above-grade conveyor system that would need to be built and would cross over the highway. The system would include a bridge structure that would protect passing traffic from any spills or debris falls. United Nuclear decided to use trucks because the use of a conveyor would pose challenges related to dust control, construction of the conveyor structure, and the fact that a conveyor could not move very large items.

Question: How much traffic would there be during this project? Also, what local roads will be available for use and at what times would they be available?

Answer: During the project, all of the local roads will be available for public use. United Nuclear estimated that the daily construction traffic added would include 30 to 40 workers or approximately 35 vehicles, plus 1 to 5 shipments of supplies, such as materials, equipment, and fuel. In addition, there would be an estimated 280 haul truck trips per day, or 40 per hour assuming the workday is 7 hours per weekday. When trucks are crossing Highway 566 to haul the mine waste to the mill site, road closures at this location would be limited to 15 minutes at a time and school buses would not be delayed. United Nuclear would also install a temporary traffic light, contamination control system, and additional signage at the crossing. The maximum speed of the trucks would be 20 miles per hour. UNC would coordinate with the New Mexico Department of Transportation and possibly other agencies for approval and operation of this haul road crossing system. Figure 3.3-1 in the draft EIS shows where the haul road would cross Highway 566 and where additional traffic signs would be placed on this road and other roads.

Air Quality and Dust

Question: The area is windy, and contaminated dust could pose a hazard for the residents who live nearby. How will United Nuclear control dust during the project? Will air monitoring take place while the waste is being moved?

Answer: United Nuclear proposes to limit dust generation during activities involving the mine waste by applying water to excavation areas, stockpiles, and roads; by covering trucks and setting speed limits; by spraying water while excavating and handling the mine wastes; by modifying or stopping work during windy conditions; by controlling the locations of work stations in relation to wind direction; and by conducting intrusive work only during low wind conditions. The USEPA, who is the regulatory authority for the mine waste cleanup, would ensure that United Nuclear complies with State and Federal requirements for air quality and air pollution. United Nuclear has developed several plans for monitoring and reporting on air quality conditions. For example, the Dust Control and Air Monitoring Plan would ensure the work activities meet State and Federal air quality regulations. In addition, United Nuclear's Radiation Protection Plan contains measures aimed at protecting the public from exposure to radiation

from the proposed action. This includes monitoring at downwind locations for radioactivity in airborne particulates. United Nuclear would also take direct gamma radiation exposure measurements at the upwind and downwind boundary of the mine and mill sites. By monitoring the air, USEPA can be sure that any dust generated on site or blown off site is not a health risk to the workers, local community members, or the general public. Section 4.7 and Table 6.3-1 of the draft EIS describe the activities and impacts of United Nuclear's earthmoving activities, including dust control.

Vegetation

Question: Will United Nuclear take care not to disturb areas containing trees, herbs, and other plants that are important to the community?

Answer: The proposed areas that would be disturbed during the project have been minimized and consist of areas where mine wastes would be excavated and areas around the Mill site where needed erosion protection measures would involve additional earthmoving. The areas to be disturbed during the project are shown on maps in the draft EIS. In particular, see Figure 2.2-2, which shows the limits of disturbance. Because this question was raised by a local Navajo citizen, the NRC staff will revise Table 6.4-1 in the final EIS for United Nuclear and EPA to consider such mitigation.

Cumulative Impacts

Question: What are cumulative impacts?

Answer: Cumulative impacts means looking at all of the impacts of different past, ongoing, or future projects in the area, and how they could have a combined effect on different aspects of the environment, such as air, water, or land. For example, the potential impacts of United Nuclear's proposal on groundwater would be small, but when considered with the significant historic impacts on groundwater from past Church Rock mining and milling activities, the cumulative groundwater impacts are large. Chapter 5 of the draft EIS presents the NRC staff's cumulative impacts analysis. Figure 5.1-1 in the draft EIS shows the locations of the other projects the NRC staff considered in this analysis.

Other Environmental Issues

Question: The proposal requires moving earth. Will digging cause damage to area homes?

Answer: Earthmoving activities using excavators and other heavy equipment for the purpose of moving mine waste to the mill site would only occur in limited areas that are not close enough to people's homes to damage them. Past excavation of contaminated soils occurred in the residential area near people's homes. However, that work is complete, and such work is not under consideration now.

Project Schedule and Next Steps

Question: When will the cleanup begin and how long will it take to complete? Has the timeline been affected by the covid-19 pandemic? Will there be other delays?

Answer: First, the NRC needs to make a decision on United Nuclear's application, and we expect to do that in January 2022. If the NRC approves United Nuclear's request, EPA would

work with United Nuclear to develop an enforcement agreement, and this process would take about a year. The construction would begin in 2023 and take 4 years to complete.

Question: When is the NRC's next public engagement for this project?

Answer: NRC will host a public webinar to accept public comments on its Draft EIS on April 29 from 6:00-9:00 p.m. Mountain Time. You will be able to attend this webinar online or by telephone. The toll-free telephone number to join the meeting will be 888-454-7496 and the passcode is 7838183.

Question: How do I provide comments on the draft EIS?

Answer: Oral comments will be accepted at our next public webinar. You can also send comments by email to UNC-ChurchRockEIS@nrc.gov, and by phone at 888-672-3425. If you want to send comments by mail, send them to the NRC at this address: Office of Administration, Mail Stop: TWFN-7-A60M, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, to the attention of Program Management, Announcements, and Editing Staff.

Question: Whom do I contact if I have questions regarding the NRC's review?

Answer: You can send an email to Ashley.Waldron@nrc.gov or call her at 301-415-7317 for questions on the environmental review, or email James.Smith@nrc.gov or call him at 301-415-6103 regarding questions on the safety review. You can also leave your question as a voicemail at this toll-free number: 888-672-3425.

That is the end of our questions and answers. Our public comment period for the draft EIS closes on May 27, 2021. You can find the draft EIS and the safety report on our website. The quickest way to get there is to go to the main page at www.nrc.gov, type United Nuclear Corporation into the main search bar, and then look for the search result that says "Draft EIS Public Comment and Meetings." On this web page, we will soon add the audio recordings and written scripts of these broadcasts.

Later, we will also present these broadcasts in Navajo, and those recordings and scripts will also be made available on our website at that time.

Thank you and good night.