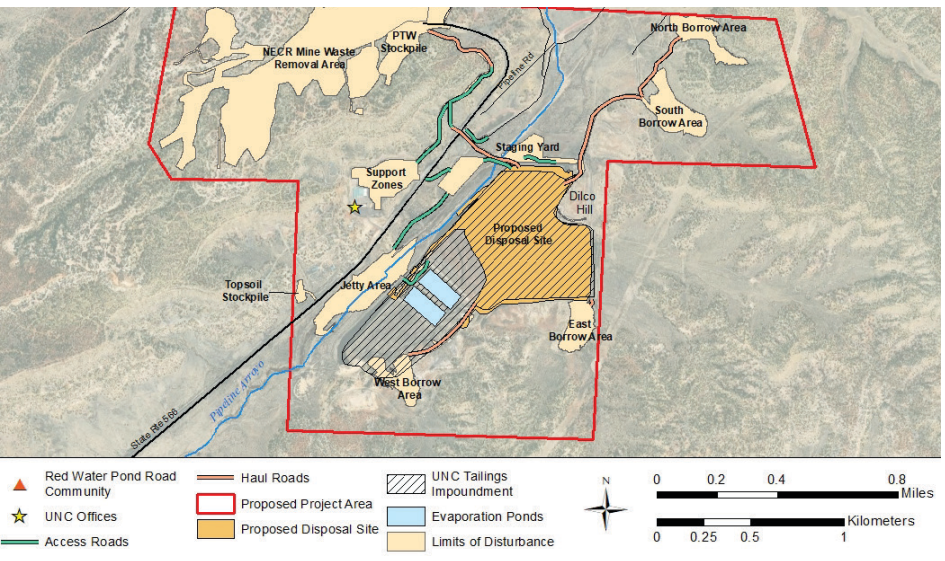
Draft Environmental Impact Statement for Disposal of Uranium Mine Waste from the Northeast Church Rock Mine Site

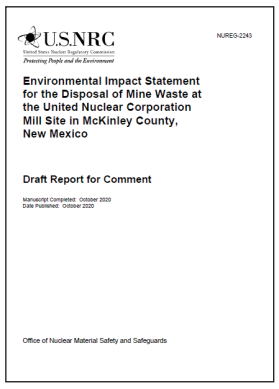
PART 1
Project Background and Description of Draft Environmental Impact Statement

This article is about a proposal to excavate mine wastes from the site of the former Northeast Church Rock uranium mine and place those wastes for permanent disposal in a repository on top of an existing uranium mill tailings impoundment at the nearby United Nuclear Mill Site. The site of the former Northeast Church Rock mine is located on Navajo Nation trust land. The adjacent Mill Site is off the Navajo Nation on private land owned by United Nuclear Corporation. United Nuclear has a current NRC license for the mill tailings impoundment on the site. These sites are both located approximately 17 miles northeast of Gallup, NM at the end of Route 566. The figure below shows the location of these sites.



United Nuclear Corporation has asked that the U.S. Nuclear Regulatory Commission (NRC) grant an amendment to its license that would allow it to bring the mine waste onto the mill site, using a design that was previously approved by the U.S. Environmental Protection Agency (USEPA). NRC is evaluating whether the proposal can be done safely and how the environment would be affected.

The NRC staff has prepared a report documenting its review of the safety of this proposal. The safety report assesses several major aspects of the proposal – geologic stability, geotechnical details of the proposal, aspects related to surface water and groundwater, and protection from radiation. Overall, the NRC staff determined that United Nuclear's proposal would meet NRC safety requirements with the addition of certain requirements (or license conditions) and provisions for long-term safety and stewardship. You can access the safety report at https://www.nrc.gov/docs/ML2021/ML20210M050.pdf. The NRC also prepared a draft environmental impact statement (EIS) for public comment, and the EIS is the focus of this article.


U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

NUREG-2243

Environmental Impact Statement for the Disposal of Mine Waste at the United Nuclear Corporation Mill Site in McKinley County, New Mexico

Draft Report for Comment

Manuscript Completed: October 2020
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Office of Nuclear Material Safety and Safeguards

The first part of this article describes the history of the mine and mill sites and explains why and how the USEPA got involved in the cleanup of the mine site. We are providing background information about the USEPA's role and decisions in this article because many people have questions about decisions that were made several years ago, before the NRC became involved. The second part explains the NRC's involvement and describes the draft EIS. At the request of the Navajo Nation, we have extended the public comment period and are **accepting comments on the draft EIS through November 1 of this year**. We are interested in hearing from readers if are other environmental issues that we may not have considered. You can access the draft EIS here: https://www.nrc.gov/docs/ML2028/ML20289A621.pdf.

Background: Northeast Church Rock Mine and United Nuclear Corporation Mill Sites

From 1977 until 1982, United Nuclear processed uranium ore at the mill facility under a State of New Mexico license. The ore came from the Northeast Church Rock Mine and other local mines and was processed to extract the uranium. As a result of this milling process, waste materials or tailings were produced. The tailings were placed on the Mill Site in an impoundment for permanent disposal.

As a result of mining and milling activities, large amounts of water were produced and discharged into the Pipeline Arroyo. About 37 billion gallons of water (from mine dewatering) at the Northeast Church Rock mine and another nearby mine flowed into the Pipeline Arroyo between 1967 and 1986. The arroyo, which previously had been an intermittent stream, became a steady flow of water during this time. On July 16, 1979, the tailings impoundment dam at the Mill Site collapsed, and 94 million gallons of mill tailings liquids were released into the Pipeline Arroyo. The embankment of the tailings impoundment was repaired, the spill was cleaned up and corrective actions were taken, and afterwards, the mill tailings impoundment continued to be used (this is discussed in more detail in EIS Section 3.12).

Operations from mining and milling, including the impacts of the spill and mine dewatering, have significantly affected the local communities, impacting their livelihoods and health and their ability to use their lands for farming and grazing. In particular, the residents of the Red Water Pond Road community and surrounding communities have suffered the greatest hardships over the last several decades.

The United Nuclear Corporation mill stopped operating in 1982, and in 1986 the regulatory authority for the Mill Site was transferred from the State of New Mexico to the NRC. The site was listed as a Superfund site by the USEPA and, in 1988, the USEPA made a decision regarding groundwater cleanup at the site. In 1991, the NRC approved a reclamation plan for the Mill Site. Surface reclamation of the former mill facilities are complete. Clean up of two tailings cells (called the Central and North cells) and part of a third, the South cell, are also complete. A portion of the South cell is still being used to hold two evaporation ponds. These evaporation ponds are used as part of ongoing groundwater cleanup activities that the NRC and USEPA are overseeing. The groundwater became contaminated as a result of milling operations. Once the groundwater cleanup activities are complete and the groundwater has been restored to acceptable limits, the evaporation ponds will be closed and capped in place.

Background: USEPA Actions in Northeast Church Rock Mine Site Cleanup Process

The NRC has received many questions about decisions that were made about the mine waste before the NRC became involved, so this section provides some background on the cleanup process at the mine site. The Northeast Church Rock Mine Site is one of the largest abandoned uranium mines of all 524 mines on and around the Navajo Nation and was selected by the Navajo Nation and USEPA as the highest priority mine for cleanup due to the proximity of the community living next to the sites. USEPA conducted investigations and made decisions about the cleanup of the NECR mine before directing United Nuclear Corporation to submit a license application to the NRC. In 2009, USEPA published a report that evaluated alternatives to dispose of the NECR mine waste. In 2011, the agency published its decision to select the cleanup plan for the Mine Site. This is the plan described in the draft EIS: United Nuclear Corporation would excavate approximately one million cubic yards of mine waste and place the waste in a repository at the United Nuclear Corporation Mill Site. In a 2013 decision, the USEPA, who oversees groundwater cleanup at the Mill Site, announced its decision for United Nuclear Corporation to accept the mine waste for placement in a repository on top of the existing mill tailings impoundment.

USEPA noted in its decision that the community and the Navajo Nation government had supported the transfer to a licensed repository farther away from the Navajo Nation. USEPA stated that it was not able to select this option under the Superfund criteria for its decision, which include costs, because both options were found to be protective and the transfer to a licensed repository farther away was estimated to cost almost seven times as much (approximately $293 million as opposed to $44 million). More information on EPA's Superfund process can be found on the EPA's website at www.epa.gov.

As part of its evaluation of moving the mine waste to a repository at the Mill Site, USEPA conducted additional studies—including boring holes through the cover, tailings, and below the tailings—to understand the water content and properties of the tailings and soils and to verify they could support the additional waste. USEPA coordinated a team to review the design for the repository that would hold the waste at the Mill Site. This "design team" included people from USEPA, the Department of Energy, the New Mexico Environment Department, the Navajo Nation Environmental Protection Agency, and the Red Water Pond Road Community Association. The NRC was kept informed about design activities but did not play an active role in the design of the repository.

In 2018, following USEPA approval of the proposed design for the mine waste repository at the Mill Site, United Nuclear Corporation submitted an application to the NRC to amend the license to allow the mine waste to be brought onto the Mill Site. This application is the proposal the NRC is currently reviewing.

NRC's Draft EIS: Overview

This section describes the NRC's role, review, and specifically the draft EIS. The NRC has authority under the Atomic Energy Act to approve or deny a proposal submitted to it based on whether the proposal can be done safely and would meet NRC requirements. The NRC does not own or operate any facilities and does not initiate proposals. The action before the NRC is either to approve or to deny the license amendment request from United Nuclear Corporation to bring the mine waste onto the mill site.

In addition to our safety review, the NRC is also required under the National Environmental Policy Act to evaluate and publicly discuss the environmental impacts of the proposal. The NRC staff prepared a draft EIS that discusses the environmental impacts of bringing approximately one million cubic yards of mine waste from the Northeast Church Rock mine on to the mill tailings impoundment.

We have heard from members of the public, including the local community, that they would like the mine waste to be moved far away. The NRC does not have the authority to *select* a different alternative or location for disposal of the NECR mine waste. That decision was made by USEPA in 2011, as described in the previous section.

NRC's Draft EIS: Proposed Action and Alternatives

The draft EIS evaluates alternatives to the proposal in United Nuclear Corporation's application for the purpose of comparing potential environmental impacts. Chapter 1 provides an introduction, site history, and describes what United Nuclear Corporation proposed in its license amendment application. Chapter 2 describes United Nuclear Corporation's proposal in detail and describes the EIS alternatives, which are separate from the alternative disposal options the EPA evaluated. The EIS alternatives, described further below, do not include taking the mine waste to another location. This chapter also includes the NRC's preliminary NEPA recommendation. The preliminary recommendation is that issuing the requested license amendment to allow the mine waste to be placed on the Mill Site would be reasonable.

The NRC's proposed action is the approval of United Nuclear Corporation's proposal. United Nuclear Corporation is proposing to transfer 1 million cubic yards of mine waste to the tailings impoundment at the Mill Site using dump trucks on access and haul roads that connect the two sites. One million cubic yards of soil would fill about six football fields to a depth of 100 feet high. Some of these roads exist now and others will be constructed. All access and haul roads would be inaccessible to the public, except for one crossing at Highway 566. After the waste is transferred, United Nuclear Corporation is proposing to cover it using soils obtained from four areas on the Mill Site. As part of this action, United Nuclear Corporation would install permanent stormwater controls using existing swales and channels on the mill tailings impoundment. The Pipeline Arroyo would also be stabilized using a riprap (rock) chute to replace the current rock jetty. United Nuclear intends that these Pipeline Arroyo improvements would withstand the heaviest rains and resulting water flow. NRC staff evaluated these stabilization plans as part of the safety review.

One of the purposes of an EIS is to compare the potential impacts from different reasonable alternatives. The NRC's evaluation of alternatives to the proposed license amendment it is considering can be found in Chapter 2 of the draft EIS. The NRC looked at the alternative of no action. No action on the Mill Site would result if the NRC decided it should not allow United Nuclear Corporation to dispose of the mine waste at the Mill Site. Without approval, the mine waste would remain at the mine site while the USEPA selects a different remedy under its Superfund process. The EIS assumes that under this no-action alternative the mine waste would remain on the mine site for an estimated 10 years before another solution is implemented. The NRC also evaluated other options United Nuclear Corporation proposed in its license application for excavating and transferring the mine waste to the mill site. These options are modifications to United Nuclear's main proposal, referred to in the EIS as "secondary alternatives." The first option proposes to use a conveyor system, in which United Nuclear Corporation would convey the mine waste across the highway to the Mill Site using an above-grade, covered conveyor system instead of by truck. The second option is to obtain cover material from the jetty area of the Pipeline Arroyo rather than from four borrow areas.

NRC's Draft EIS: Environment and Potential Impacts

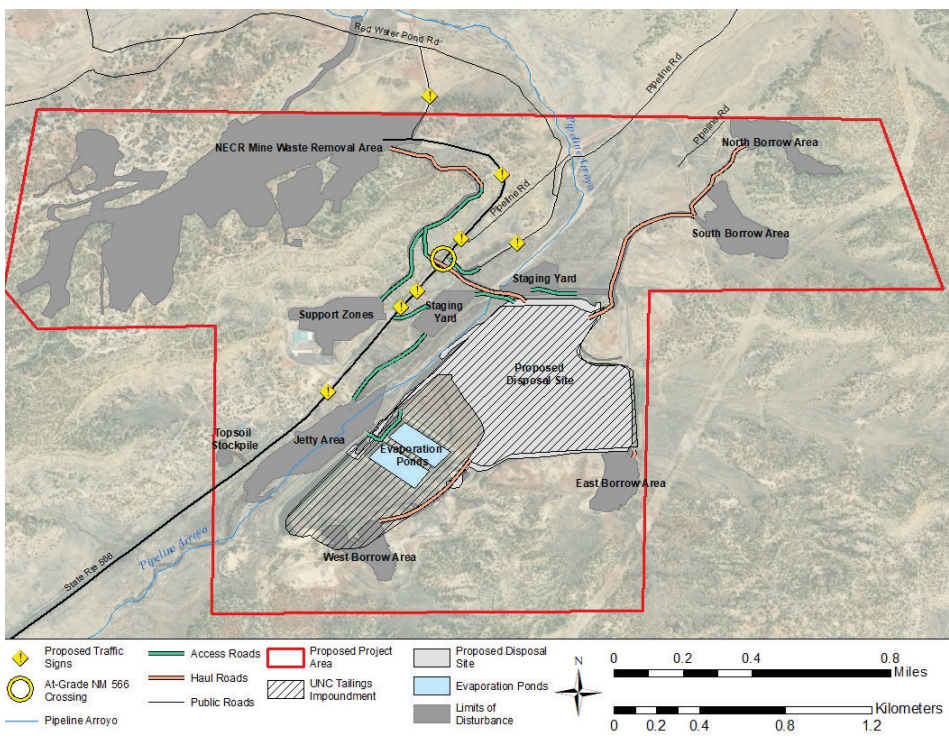
The current environmental conditions at and around the Mine and Mill sites are described in Chapter 3 of the draft EIS. The purpose of this description is to understand how United Nuclear's proposal could affect the current environment. The draft EIS describes many aspects of the environment, including land use, transportation, geology and soils, water resources (surface water and groundwater), vegetation and wildlife, air quality, noise levels, visual and scenic resources, historic and cultural resources, socioeconomic conditions, public and occupational health, and waste management. The draft EIS also identifies low-income and minority populations to consider how these populations could be affected disproportionately by the proposal (environmental justice).

Chapter 4 describes the potential environmental impacts from the proposed action and the alternatives. The NRC evaluated impacts for three phases of the proposed project: 1) construction of the proposed repository, which includes excavation of the mine waste and construction of haul roads, 2) transfer of mine waste to the Mill Site, including loading and trucking the waste, and 3) disposal, which includes revegetation and placement of the final earthen and vegetated cover. Chapter 4 also includes a discussion of potential measures to reduce or avoid adverse environmental impacts.

Most of the impacts would occur during the anticipated 3½-year excavation, construction, and waste transfer period, and then the impacts would stop. Impacts from transportation and noise, and impacts on surface water, vegetation, air quality, historic and cultural resources, and visual and scenic resources, and on minority or low-income populations would be noticeable. More details about the potential impacts described in Chapter 4 are provided in the following paragraphs.

Transportation impacts would result both from increased traffic and from the building of new roads. Haul roads would be constructed from the mine to the mill site and would cross highway 566. NRC staff estimated that during the construction phase, traffic on 566 near the haul road crossing would increase by 68 percent. United Nuclear Corporation estimated that 280 truck trips would occur per day, or 40 trips per hour, assuming 7 work hours per day. Road closures would be limited to 15 minutes or less at a time, and school buses would not be delayed. United Nuclear Corporation would also install a temporary traffic light system and additional signage at the Highway 566 crossing. United Nuclear Corporation would submit a construction related traffic control plan to the New Mexico Department of Transportation for review for all activities that would impact traffic on public roads.

The figure below shows proposed project area access and haul roads and traffic signs.



Noise impacts would occur primarily during construction and transfer activities, from the use of construction equipment and from excavation activities. Increased traffic would also contribute to noise levels. Noise levels would exceed levels experienced in a typical quiet rural area. The closest noise receptors to the proposed project are the residents of the Red Water Pond Road community, and due to their proximity they are considered sensitive noise receptors. United Nuclear Corporation has proposed to reduce noise from the project by limiting work hours to 7 hours per day on weekdays and would only operate on the weekend if necessary. For more information related to noise impacts, see Section 4.8 of the draft EIS.

Impacts to surface waters could result from stormwater runoff and subsequent erosion. Erosion could occur in newly disturbed areas or in the Pipeline Arroyo. However, United Nuclear Corporation has proposed measures to address these potential impacts, such as implementing a USEPA-approved plan that would address stormwater management practices. Best management practices that could be included in that plan are: capture and isolate surface water and stormwater with the potential to come into contact with mine waste; minimize site grading; install silt fences and stormwater basins to capture stormwater runoff from sloped areas; and divert stormwater away from construction activities to prevent potential contamination. This plan would also ensure compliance with the Clean Water Act. As noted above, to address erosion in the Pipeline Arroyo, United Nuclear Corporation is proposing to replace the buried rock protection area, known as the jetty, in the Pipeline Arroyo. The new design would have a rip-rap chute, a wide channel lined with large rocks, to carry water through the arroyo and away from the tailings impoundment and mine waste repository. For more information on surface water impacts see Section 4.5 of the draft EIS.

Impacts to air quality from the project would be primarily from dust generated by vehicles on unpaved roads, wind erosion in disturbed areas, and emissions from mobile sources and construction equipment. United Nuclear Corporation has proposed measures in its license application for controlling fugitive dust, including covering haul trucks and imposing a speed limit of 20 miles per hour on haul and access roads. United Nuclear Corporation is also proposing to use water for dust suppression on stockpiles, on haul roads, and in excavation areas, placement areas, borrow areas, stockpiles, and screening areas. The NRC has described these proposed measures in Table 6.3-1 of its draft EIS and in its description of air quality impacts see Section 4.7.

Impacts on historic and cultural resources could potentially result primarily during the construction phase, when ground-disturbing activities would occur. Five cultural resource sites have been documented within the limits of disturbance on the mine and mill sites; those five sites are recommended as eligible under the National Register of Historic Places. The sites consist of Anasazi Pueblo habitation and artifact scatter, and Anasazi and historic Navajo pictographs. To ensure that these sites would be protected and not disturbed during ground-disturbing activities, the NRC is developing a Programmatic Agreement in coordination with the USEPA, Bureau of Indian Affairs, Navajo Nation Tribal Historic Preservation Office, New Mexico State Historic Preservation Office, and United Nuclear Corporation. This agreement will describe the procedures needed to ensure that the sites are protected and proper procedures are followed if any unanticipated discoveries are made during project activities. For more information on historic and cultural resources, see Section 4.9 of the draft EIS.

Visual and scenic impacts during the construction and transfer phases would result from the use of heavy equipment and introduction of new roads; these impacts would primarily affect those living closest to the site. Impacts to visual and scenic resources during the closure period would occur after the cover is placed on the repository. This is because the maximum height of the repository over the current impoundment would be 43 feet above the existing ground level. Due to varying topography, this permanent change in the landscape may not be significant to the casual observer but could be significant to the local community living nearby. To reduce negative visual impacts, United Nuclear Corporation would regrade and revegetate disturbed areas with local soils and native plants. For more information on visual and scenic impacts, see Section 4.10 of the draft EIS.

The Red Water Pond Road community is closer than any other community to the proposed project area and could be impacted by dust, noise, and traffic. The USEPA is therefore providing voluntary alternative housing options for residents in this community in coordination with the U.S. Army Corps of Engineers.

Chapter 5 of the draft EIS considers and evaluates the potential cumulative impacts that could occur. Cumulative impact means looking at all of the impacts of different past, ongoing, or future projects in the area and how they would have a combined effect on the environment. For example, the impacts of United Nuclear Corporation'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.

NRC's Draft EIS: Mitigation Measures, Monitoring, Costs/ Benefits

Chapter 6 includes an evaluation of specific measures that United Nuclear Corporation proposes or that the NRC identified to reduce the impacts of the proposal. This chapter also describes applicable requirements for the Mine Site that are within the EPA's authority under CERCLA and describes how USEPA ensures that the activities would follow local, state, and federal agencies' requirements. This chapter also identifies measures proposed by the Navajo Nation to reduce impacts. For example, the Navajo Nation Environmental Protection Agency recommended that, to help preserve the Navajo culture, culturally important or sacred ceremonies, such as blessings by medicine men, should be held before land-disturbing activities begin. United Nuclear Corporation also proposes to give first preference to qualified, local Navajo people who may wish to work on the project during construction activities.

Chapter 7 describes United Nuclear Corporation's proposed environmental monitoring programs. These programs were designed to ensure that United Nuclear Corporation would meet NRC safety regulations, including limits on releases of radiation to air and water, radiation dose limits for the public and workers, and requirements for reporting to the NRC. Monitoring programs provide information on operations and environmental conditions and would serve to alert United Nuclear Corporation and the NRC if any circumstances arise that require prompt corrective action. These programs help to limit potential environmental impacts and therefore are relevant to the NRC staff's environmental impact analyses.

Chapter 8 describes the societal costs and benefits associated with the proposed action and the alternatives. The purpose of this analysis is to disclose major quantitative and qualitative costs and benefits to evaluate the merits of the EIS alternatives. The evaluation, in general, considers major environmental and economic costs and benefits associated with construction of the proposed disposal site, transfer of mine waste, and closure activities during the estimated 4-year proposed action. This analysis also considers factors that may not have a quantifiable cost. For example, returning the Mine Site to the Navajo Nation for grazing livestock and growing plants for traditional uses is a significant benefit that is not directly quantifiable.

Other information in the draft EIS includes a summary of unavoidable adverse environmental impacts and required commitments of resources. There is also an Appendix that includes information about correspondence with other agencies and Tribal governments associated with the preparation of the draft EIS.

The NRC's preliminary NEPA recommendation, after evaluating the impacts of the proposed action and comparing them to the no-action alternative, is that issuing the requested license amendment would be reasonable. Our recommendation is based on the NRC staff's analysis in the EIS and on consultation with Federal, State, Tribal, and local agencies, and input from other stakeholders.

For More Information

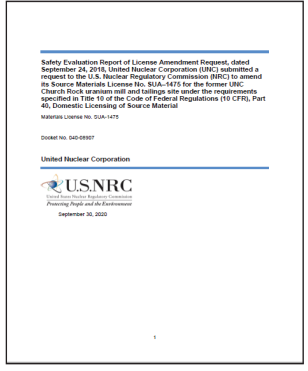
You can access a copy of the draft EIS and other related documents and information on our website at https://www.nrc.gov/info-finder/decommissioning/uranium/united-nuclear-corporation/meetings.html. Comments will be accepted in writing, by email to UNC-ChurchRockEIS@nrc.gov, and by phone at 888-672-3425. Public meeting information, including public meeting recordings and radio broadcasts, are also available on that web page. We are seeking your comments on the draft EIS through November 1, 2021. If you have any questions regarding the NRC's environmental review, you may email Ashley Waldron at Ashley.Waldron@nrc.gov.

PART 2
Description of NRC Staff's Safety Evaluation Report

This section is about the U.S. Nuclear Regulatory Commission staff's assessment of the safety a proposal by the United Nuclear Corporation to place uranium mine wastes for permanent disposal in a repository on top of a uranium mill tailings impoundment at the United Nuclear Corporation Mill Site. The mine wastes would be excavated and transferred from the nearby Northeast Church Rock Mine Site. Both sites are both located approximately 17 miles northeast of Gallup, NM at the end of Route 566.

The previous article (Part 1) described the Environmental Protection Agency's role in the Northeast Church Rock mine cleanup over the last 15 years and the NRC's process to review the proposal to place mine waste on the Mill Site and develop the EIS that we are now seeking public comments on. As described in that article, the EIS evaluates the potential environmental impacts to inform the

public about the proposal and to make sure we have considered the relevant information in assessing the impacts. This article (Part 2) describes the NRC staff's technical review to determine whether United Nuclear's proposal can be done safely. This safety review is different from our environmental review in that it focuses on the details of the proposal to determine whether it would meet NRC requirements for the protection of public health and safety and the environment. The results of the NRC's safety review are described in a report called the safety evaluation report. You can access the safety report at https://www.nrc.gov/docs/ML2021/ML20210M050.pdf.


Safety Evaluation Report of License Amendment Request, dated September 24, 2018, United Nuclear Corporation (UNC) submitted a request to the U.S. Nuclear Regulatory Commission (NRC) to amend its Source Materials License No. SUA–1475 for the former UNC Church Rock uranium mill and tailings site under the requirements specified in Title 10 of the Code of Federal Regulations (10 CFR), Part 40, Domestic Licensing of Source Material

Materials License No. SUA-1475

Docket No. 040-08907

United Nuclear Corporation

U.S.NRC

September 30, 2020

The NRC will use both the safety evaluation report and the environmental impact statement (described in Part 1) to decide whether or not to allow United Nuclear to place the mine waste on the Mill Site. This final licensing decision is expected to be made in June of 2022.

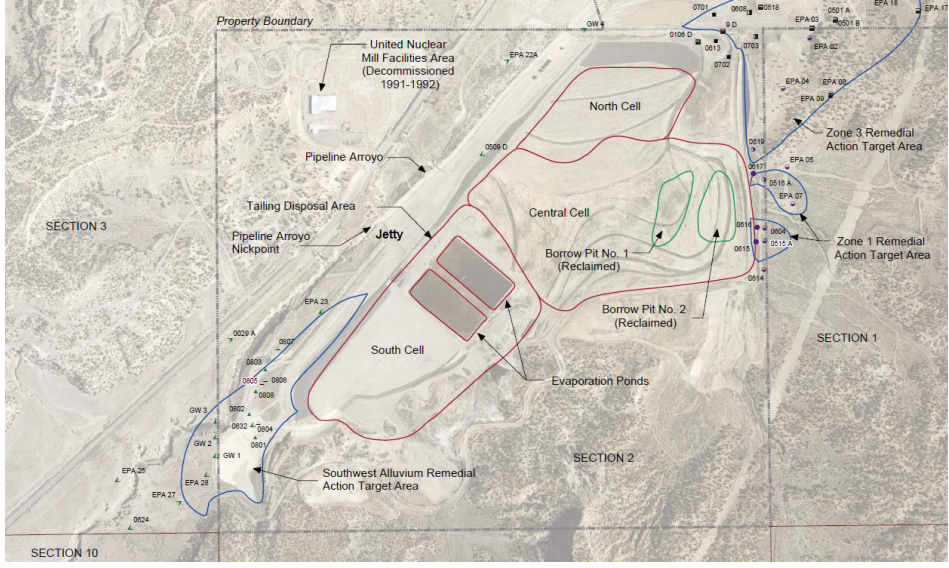
Areas of Review in NRC Safety Evaluation

This section describes what the NRC staff assessed in detail during our safety review of this proposal. The safety report is organized into chapters that address several topics. For each topic, the safety report identifies the NRC requirements that need to be met and explains what information the NRC staff looked for to determine whether United Nuclear's proposal would meet those requirements. Next, the report describes the analysis that the NRC staff conducted and explains the conclusions or findings for each topic. The main topics the NRC staff reviewed in the safety report include:

- the geology of the site and how the underlying rock formations and soils could affect the integrity of the tailings impoundment (addressed in Chapter 2 of the safety report);
- the stability of the impoundment and geotechnical details of the proposal (addressed in Chapter 3);
- how surface water flows on and around the Mill Site, and how water could cause flooding or erosion of soils (addressed in Chapter 4);
- how the proposal might affect groundwater, and ensuring the groundwater is adequately monitored (addressed in Chapter 5); and
- protection from radiation, including an assessment of radiation levels from the impoundment and ways to control and monitor radiation levels (addressed in Chapter 6).

Geology and Seismology

The first main topic in the safety report is the geology of the site and how the underlying rock and soils could affect the stability of tailings impoundment with the addition of the mine waste. The NRC staff reviewed United Nuclear Corporation's proposal in detail to determine if enough information was included about the geology of the region, and specifically the Mill Site, and if enough information was included about how faults (cracks in very large rock formations) and ground movement (such as earthquakes) affect the region and might affect the Mill Site. We reviewed the detailed information provided by United Nuclear about rock formations underneath the site and in the surrounding area. We also reviewed information about faults and the potential for mild or severe earthquakes to occur and how those earthquakes might affect the impoundment. We reviewed information about processes involving water and ground movement that could change the shape of the land and surrounding waterways and how these processes might affect the impoundment. After assessing all of this information and comparing it to NRC requirements, the NRC staff concluded that the subsurface conditions at the Mill Site would provide enough stability to protect the impoundment from damage by these processes. The NRC staff also determined that the impoundment is not located near a fault that could cause an earthquake larger than the impoundment could withstand. Overall, the NRC staff determined that the aspects of United Nuclear's proposal related to geology meets NRC requirements and that the tailings impoundment with the added mine waste would be protective.



The figure above (Figure 2 of the Safety Evaluation Report) shows the geomorphic features of the Mill Site.

Geotechnical Stability

The next topic is the NRC staff's detailed assessment of how United Nuclear Corporation's proposal to construct a mine waste repository on top of the existing impoundment might affect the impoundment's stability and integrity. We evaluated how the existing impoundment would handle placement of 1,000,000 cubic yards of mine waste, plus another 430,000 cubic yards of soil and 60,000 cubic yards of rock that would be needed for an earthen cover. The specific areas we reviewed include the site characteristics, the stability of the impoundment and mine waste repository slopes, settlement of soils resulting from placement of the mine waste, and liquefaction of the tailings within the impoundment. Liquefaction is when soils behave like a liquid under certain conditions. Other areas the NRC staff reviewed are the design of the cover that would be placed over the mine waste and the movement of water through the mine waste repository impoundment.

In reviewing the engineering and technical details of the site, the NRC staff also considered the characteristics of the mine waste, existing mill tailings, areas from which soil would be taken to be used in the repository, and soil stockpiles. We determined that United Nuclear's characterization of these aspects of the site was adequate for the NRC staff to verify that these aspects would not be an obstacle to safe disposal and long-term safety. We also determined that the site is not near an earthquake fault that could produce an earthquake larger than the impoundment could withstand.

The NRC staff also assessed whether the proposed slopes of the mine waste repository and the underlying impoundment would meet NRC requirements. We assessed several areas in detail. These are whether the slopes would remain stable, be protected from wind and water by vegetation or a rock covering, minimize the pooling of rainwater, not be damaged by an earthquake, and be protected against a slope failure. We determined that United Nuclear Corporation's proposed repository design would meet NRC requirements for slope angle (how steep the slopes would be). The NRC staff also assessed the amount of settlement that would occur after the mine waste is placed on top of the impoundment. We evaluated 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 repository. The staff also assessed whether the existing mill tailings could behave like a liquid if an earthquake were to occur (the process of liquefaction). We determined that the proposal would adequately address settlement, and ponding of water is not expected. The NRC staff also concluded that liquefaction is not a risk to the tailings impoundment.

The NRC staff also assessed the proposed design of the earthen cover that would be placed on top of the mine wastes. In this review, we looked at the proposed soil and rock types, freezing and thawing effects on the cover soils, and possible ways the cover could be penetrated or could crack, and as a result would not be as effective. Most of the mine waste repository would be covered by a soil and rock mixture. The soil and rock mixture is designed to function as an evapotranspirative cover. This means the soil and rock mixture absorbs rainwater and stores it until it is released back into the air either by evaporation or through vegetation by a process called transpiration. Evapotranspirative covers reduce the amount of rainwater that could infiltrate into the impoundment. The complete cover would be 4 and ½ feet thick. We concluded, based on our detailed review, that the cover would meet NRC requirements and that the cover would be protective and keep the material isolated.

The NRC staff also conducted a review of how water could move through the mine waste repository and tailings impoundment. For this review, we focused on the properties of the cover, specifically

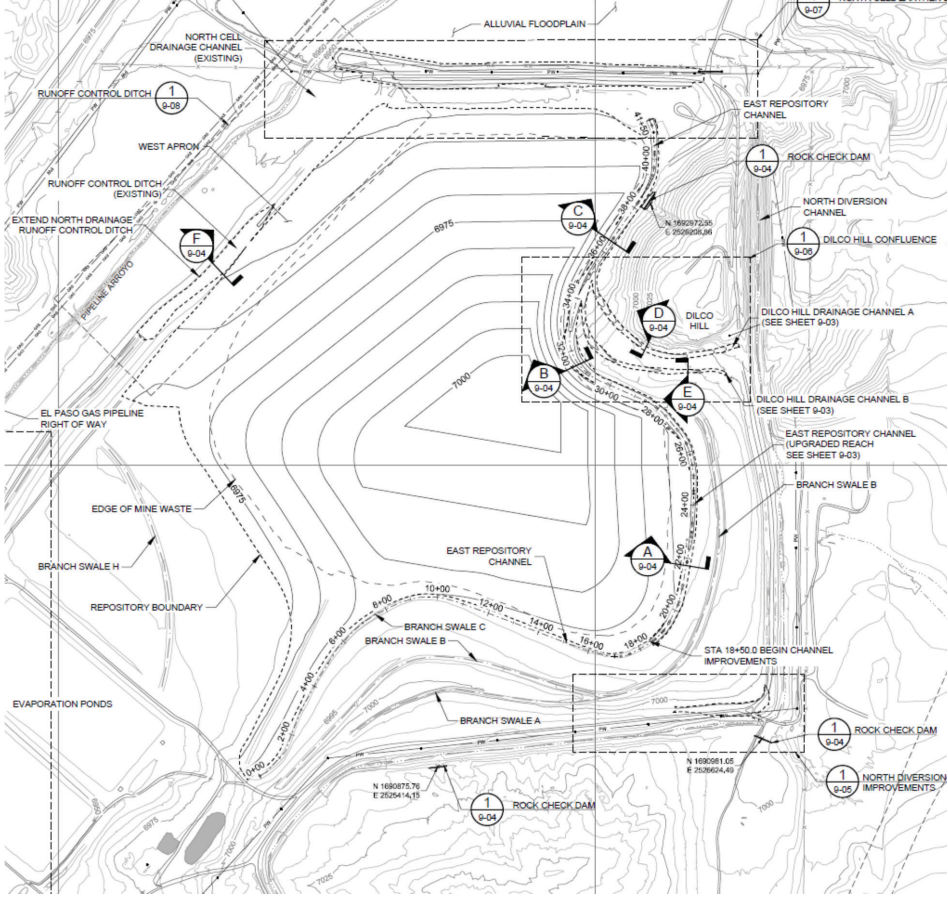
how it would remove rainwater from the soils through the use of vegetation that is self-sustaining. This would greatly reduce the amount of rainwater that could pass through the cover, mine wastes, and underlying radon barrier and mill tailings. The NRC staff also considered whether heavy rains could cause water entering the cover system to move through the mine waste, reach the mill tailings, and result in seepage from the tailings into the groundwater. We concluded that the vegetative cover would be self-sustaining and that the proposed cover design meets NRC's requirements. We also concluded there are uncertainties in the computer model developed to predict long-term movement of water in the cover system. We concluded that although it is unlikely that groundwater would be impacted, the computer model had uncertainty in its forecasting. To address this uncertainty, the NRC staff determined that a robust groundwater monitoring program is needed to provide early detection of changes in the groundwater. The NRC staff is proposing to require additional groundwater monitoring as a condition in United Nuclear's license.

Surface Water Hydrology and Erosion Protection

The next major topic addressed in the safety report is the NRC staff's review of surface water hydrology and erosion protection for maintaining the long-term stability of the tailings impoundment and proposed repository. In this review, we evaluated the information United Nuclear Corporation provided to describe the site hydrology, the severity of potential floods, the flow of surface water through channels at the site (such as the Pipeline Arroyo), and proposals to prevent the erosion of site soils. United Nuclear has proposed changes to the existing drainage system on and around the current tailings disposal area. The proposed changes are intended to manage surface water runoff from the mine waste repository and improve protection from flooding and erosion. United Nuclear's proposed changes include replacing the buried rock protection area (known as the jetty) in the Pipeline Arroyo with an improved design. The new design would have a rip-rap chute to carry water through the arroyo and away from the tailings impoundment and mine waste repository. In addition, United Nuclear would also construct an earthen cover to be placed over the mine waste. This cover would capture rainwater and allow it either to evaporate or to be absorbed by vegetation and released back into the air through the plants.

The NRC staff focused its detailed review of flooding on water flow in and around the Pipeline Arroyo. We reviewed the proposed improvements to the Pipeline Arroyo and new features that are proposed to control and direct surface water off the mine waste repository. In our review, we evaluated information about the frequency, duration, and intensity of rains and the resulting water flow over and around the tailings impoundment and mine waste repository. United Nuclear Corporation's design is based on the probable maximum precipitation, which is the greatest depth of rain that could fall in a certain area during a storm. The probable maximum precipitation that the NRC staff evaluated is based on climate and weather records and statistical analysis. Our review focused on the probable maximum precipitation event as well as the surface water runoff after such an event. This included a detailed look at the potential for erosion and United Nuclear's proposed erosion control measures. We assessed whether proposed slopes and embankments could resist the expected flow of water; looked at details of the proposed riprap chute and the use of appropriate rock sizes, shapes, and durability; and reviewed the potential for sediments to build up, the role of vegetation, and the potential for wind erosion. After conducting our review, the NRC staff determined that the mill tailings and mine waste would be protected from flooding and erosion by the cover system, a series of channels around the perimeter of the repository, and other proposed erosion protections.

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 is needed to verify that the Pipeline Arroyo improvements (riprap chute) and drainages at the site would perform as designed during storms. In addition, United Nuclear would be required to repair any damage, determine if changes need to be made to improve flood and erosion protection, and determine what actions should be taken and the costs of those actions to ensure long-term stability before the site is transferred to the Department of Energy for long-term care. The NRC staff has proposed other license conditions that would help ensure protection from flooding and erosion, and these are described in Chapter 4 of the safety report.



The figure above (Figure 12 from the Safety Evaluation Report) shows the layout of the drainage system in the proposed repository area of the Mill Site.

Protecting Groundwater Resources

The next major topic is protecting groundwater resources. The NRC staff reviewed United Nuclear Corporation's proposal to evaluate how the groundwater could be affected by placing the mine waste on the tailings impoundment. The added weight of the mine waste could cause mill tailings liquids to move downward and possibly reach groundwater. This might happen when the mill tailings become squeezed by the weight of the added mine waste, or it might happen if the proposed cover for the repository does not function as it should and allows rainwater to pass through to the mill tailings and then into groundwater. We conducted a detailed review to determine how much water could be released when the mill tailings are compressed by the mine waste. We concluded that the amount of water that would be drained from the tailings would be limited and that it is unlikely this water would affect groundwater. However, because it is not certain whether the tailings water would affect the groundwater, the NRC would require additional monitoring of the impoundment wells to detect chemicals from the mill tailings that might have reached groundwater.

The NRC staff also reviewed the details of the groundwater monitoring network that is currently in place to make sure it would be sufficient for monitoring after the mine waste is added. This network has wells to monitor for seepage from the mill tailings impoundment, and these wells are also used to gather information for the ongoing groundwater cleanup at the Mill Site. Samples from the wells are taken every three months. We determined that additional wells that are in place on the site should be added to this monitoring network and that the resulting number of wells in the network and their locations would be adequate for future monitoring. And, as noted above, we concluded that monitoring of those wells needs to increase after the mine waste repository is placed on the impoundment. If the new monitoring and sampling data show that the mill tailings water is adversely affecting the quality of the groundwater, United Nuclear would need to make a plan to address the situation. Chapter 5 of the safety report lists the wells that need to be sampled and the chemicals that need to be checked for in the samples.

Separate from the NRC staff's safety review of this proposed mine waste action, United Nuclear is still cleaning up groundwater under the Mill Site that was contaminated by past activities. This cleanup action is overseen by both the U.S. Environmental Protection Agency (EPA) and the NRC. The contaminated groundwater is pumped to the surface and stored in two large ponds that are lined to prevent seepage back into the ground. The purpose of these ponds is to allow the water to evaporate, leaving the uranium and other chemicals in the lined bottom of the ponds to be disposed of later. This separate groundwater cleanup program will continue until the NRC and EPA have determined that United Nuclear has met the applicable requirements. More information about this program is provided in Chapters 2, 3, and 5 of the NRC's draft EIS.

Radiation Protection

Another major topic assessed in the safety report is protection from radiation. The NRC staff looked at how the cover to be placed over the mine waste repository would protect people and the environment from radiation, how soil with low levels of radioactivity would be cleaned up and disposed of, and what controls would be needed for workers during the construction of the mine waste repository. First, the cover: as discussed above, the proposed mine waste repository would entail preparing the surface of the impoundment to receive the mine waste. United Nuclear Corporation has stated that it would place the mine waste on top of the radon barrier that is already in place for the mill tailings. After placing the mine waste, United Nuclear would add a cover of soils that protects the impoundment from rainwater and protects people and the environment from radiation. The cover would be 4 and ½ feet thick and would be evapotranspirative – this means that United Nuclear would plant vegetation that is good at absorbing rainwater from the soil and releasing that moisture back into the air. This would help prevent rainwater from moving downward into the tailings impoundment. The vegetation would also help prevent soils from being washed away during rains. Just beneath the vegetation, the very top layer of the cover would be soil mixed with rock to further prevent the underlying soils from washing away. We conducted a detailed technical review to determine whether the added mine waste and the new cover would meet NRC requirements for protection against radiation. We concluded that the proposal would meet NRC requirements for the placement of an earthen cover over mill tailings to ensure protection against radiation for at least 200 years and up to 1,000 years.

The NRC staff also reviewed United Nuclear's plan to conduct radiation surveys at the Mill Site after the mine waste and cover are in place. These surveys must show that the radiation levels from the site are within NRC limits. We determined that United Nuclear's survey plans would meet NRC requirements for radiation surveys. To be clear, this is approval only of the survey design. If the NRC approves United Nuclear's request for disposal of the mine waste, and after the mine waste is in place and United Nuclear has conducted surveys, the NRC staff would at that time review the survey results to determine if the Mill Site complies with NRC requirements for protection against radiation.

The NRC staff also reviewed United Nuclear Corporation's plan to protect workers and the environment from radiation at the Mill Site, including limiting airborne dust. Note that the NRC does not have authority over United Nuclear's mine waste activities that are outside the Mill Site boundary. Those activities fall under EPA authority for the mine waste cleanup. The methods United Nuclear would use to reduce exposures from the mine waste would likely include applying water to areas to be excavated, spraying water during excavation and handling of the mine wastes and other soils, modifying or stopping work during windy conditions, and controlling work locations depending on wind direction. Also, United Nuclear plans to set up control points to check for contamination and would use loading methods and coverings to minimize airborne dust during loading, unloading, and hauling of mine waste. We determined that these measures are adequate for controlling dust from mine wastes as they are unloaded and added to the repository. The safety report also describes several plans United Nuclear has developed to control and monitor for radiation and to promptly notify the NRC of incidents and keep records of worker and public exposures. We determined that United Nuclear has provided an adequate plan for controlling radiation, monitoring for exposures, and protecting the environment while mine waste is being placed on the Mill Site in accordance with the NRC's radiation protection requirements and EPA standards.

PART 3
Questions and Answers

This section answers some of the questions we have heard from the public and the local community during the draft EIS public comment period. Some of these questions relate to the NRC's draft EIS or to safety review and others pertain to areas that fall under the authority of the United States Environmental Protection Agency (USEPA).

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: 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. The draft EIS does not speculate about where the waste would go. The NRC would not have a role in any disposal alternative that does not involve an NRC-regulated facility.

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. 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 Containing Higher Concentrations

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-concentration 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 stated above, 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: What is in the two evaporation ponds that are currently on the Mill Site? What protections and signage exist for 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.

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 June 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. Once it begins, the construction would take 4 years to complete.

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

Answer: You can send comments by email to UNC-ChurchRockEIS@nrc.gov, leave comments by phone message 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.