U. S. Nuclear Regulatory Commission

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

Radio Broadcast - Background and Overview of NRC's Draft EIS

Introduction

Good Evening, my name is Ashley Waldron and I work for the United States Nuclear Regulatory Commission, or NRC. This is the first of three broadcasts this week about a proposal 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 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. United Nuclear has asked that the 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 US 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 reviewed this proposal and prepared a safety report. The safety report documents the NRC staff's evaluation of United Nuclear's proposal and assesses several major areas – these areas are 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 requirements with the addition of certain requirements (or license conditions) and provisions for long-term safety and stewardship. We will describe the safety report in more detail in tomorrow night's broadcast. The NRC also prepared a draft environmental impact statement (I'll refer to this report as a draft EIS) for public comment, and that will be the focus of tonight's broadcast.

Tonight's broadcast is separated into two parts. The first part of tonight's broadcast will describe the history of the mine and mill sites and explain why and how the U.S. Environmental Protection Agency (or USEPA) got involved in the cleanup of the mine site. We wanted to provide some background information about the US EPA's role and decisions, because we have received many questions about decisions that were made several years ago, before the NRC became involved. During the second part, I'll explain why the NRC is involved and describe the NRC's process. Then, I'll discuss the details of the draft EIS and explain how you can comment on our draft document. At the request of the Navajo Nation, we have extended the public comment period and are accepting comments on the draft EIS through May 27 of this year. We are interested in hearing from you on whether there are other environmental issues that we may not have considered.

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

Now, I'd like to provide some history as well as the current status of the United Nuclear Mill Site. 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. It is estimated that 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).

At this point, I'd like to take a moment to acknowledge that operations from mining and milling, including the impacts of the spill and mine dewatering, have significantly affected the local communities, impacting their livelihoods and their health and 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 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 issued 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 cell, called 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

I want to provide a little background on the cleanup process at the mine site because we've received many questions about decisions that were made about the mine waste before the NRC was involved. 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 as the highest priority mine for cleanup by the Navajo Nation and USEPA due to the location of the community living next to the waste pile. USEPA made several decisions related to the cleanup of the NECR mine before directing United Nuclear to submit a license application to the NRC. These decisions included: developing a report in 2009 – looking at alternatives to dispose of the NECR mine waste, a 2011 decision by USEPA that selected a cleanup plan for the NECR mine site to excavate the approximately one million cubic yards of mine waste from the Mine Site and place the waste in a repository at the United Nuclear Mill Site; and a 2013 decision by USEPA, who

oversees the groundwater cleanup at the Mill Site, for the mill site 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 further 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 further away from the Navajo Nation 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.
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As part of its evaluation of moving the mine waste to a repository at the mill site, additional studies were conducted included boring holes through the cover, tailings, and below the tailings to understand the water content and properties of the tailings and soils to ensure 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 a representative from the Red Water Pond Road Community Association assisted by USEPA's Technical Assistance Services for Communities contractor. The NRC was kept informed about design activities, but NRC 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, United Nuclear submitted an application to the NRC to amend the license and 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

Now that we've provided some history of the mine and mill sites and the USEPA's process, I'd like to move to part two of tonight's broadcast. During the second part, I will discuss the NRC's role, review, and specifically the draft Environmental Impact Statement or EIS. NRC has authority under the Atomic Energy Act to approve or deny a proposal submitted to us based on whether it could 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 to either approve or deny the license amendment request that we have received from United Nuclear 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 which 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. NRC's safety review was initially completed in October 2020 and found that the proposed repository would comply with NRC's safety requirements with the addition of certain conditions for observation and groundwater monitoring to ensure the repository and underlying impoundment perform as designed in the coming years. In addition, NRC is required to consider the environmental impacts of the project.

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 I described earlier tonight. The draft EIS evaluates alternatives to the specific proposal in United Nuclear's application for the purpose of comparing potential environmental impacts. I will describe these EIS alternatives in a few minutes.

NRC's Draft EIS: Proposed Action and Alternatives

Now, I'd like to discuss the contents and the analysis of the draft EIS. If you have a copy of the draft EIS – now may be a good time to pull it out to reference as I'll be mentioning various chapters and sections in the next portion of the broadcast. The document can also be accessed online by going to our website at www.nrc.gov These broadcasts (written and audio) will be made available on our website after this broadcast airs.

Chapter 1 provides an introduction, site history, and describes what United Nuclear proposed in its license amendment application. Chapter 2 describes United Nuclear's proposal in detail and describes the EIS alternatives the NRC considered for the purpose of comparing environmental impacts. The draft EIS alternatives do not include taking the mine waste to an alternative location. The alternatives to the NRC's proposed action regarding United Nuclear's license amendment request include denying the license amendment, which would mean that the mine waste would not be allowed to come to United Nuclear's Mill Site, as well as secondary alternatives to the proposed action, which include bringing the mine waste to the mill by conveyor belt instead of by truck, or covering the mine waste with soil from the Pipeline Arroyo (Jetty area) instead of soil from other areas at the mill site (borrow areas). This chapter also includes the NRC's preliminary NEPA recommendation. The preliminary recommendation is that, after evaluating the impacts of the proposed action and alternatives is that issuing the requested license amendment to allow the mine waste to be placed on the Mill Site would be reasonable.

Now I will provide some more details about the proposal. United Nuclear 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 roads will be inaccessible to the public, except for one crossing at Highway 566. United Nuclear proposed to obtain cover material that would be placed over the top of the consolidated mine waste from four borrow areas on the Mill Site. As part of this action, United Nuclear 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 chute to replace the current rock jetty, and United Nuclear intends that these Pipeline Arroyo improvements would withstand the heaviest rains possible and resulting water flow. NRC staff evaluated these stabilization plans as part of the safety review, which will be discussed during tomorrow night's broadcast.

Now we are going to discuss the draft EIS alternatives and why we looked at those. 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 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 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. The first option proposes to use a conveyor system, where United Nuclear would convey the mine waste from the Mine Site 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 rather than from the four borrow areas.

NRC's Draft EIS: Environment and Potential Impacts

Now that we've discussed the proposal and alternatives, we will move on to describing the current environment at the project site, which is captured in Chapter 3 of the draft EIS. The staff looks at 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 considers environmental justice, evaluating how minority or low-income populations could be affected disproportionately by the proposal.

Chapter 3 describes the current conditions for all of these environmental aspects or resources at and around the Mill Site and Mine Site. The purpose of this description is to understand how United Nuclear's proposal could affect the current environment. The United Nuclear mill site is on privately-owned land, and the mine site is on Navajo trust land. New Mexico Highway 566 is a two-lane highway that provides primary access to the mine and mill sites. It is estimated that there are 34 occupied homesites within 2 miles of the project area. As I mentioned earlier, the Pipeline Arroyo is a drainage with intermittent flow present at the United Nuclear mill site that was used between 1967 and 1986 for mine dewatering and discharge. Flows in the Pipeline Arroyo now are intermittent and are seen after rains.

Chapter 4 describes the environmental impacts from the proposed action and the alternatives. NRC evaluated impacts for three phases of the proposed project those include: 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 from mine to mill, and 3) disposal, which includes revegetation and placement of the final cover. This chapter also includes a discussion of potential measures that could reduce or avoid adverse environmental impacts.

Most of the impacts would occur during the anticipated 3-and-a-half-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. I will now provide more information about these potential impacts that are described in the draft EIS.

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 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 would also install a temporary traffic light system and additional signage at the Highway 566 crossing. United Nuclear would submit a construction related traffic control plan to the New Mexico Department of Transportation for review for all activities that impacts traffic on public roads.

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 has proposed to reduce noise from the project by limiting work hours to 7 hours per day during the daytime on weekdays. United Nuclear would only operate during weekend hours 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 has proposed measures to address these potential impacts. For example, United Nuclear would develop and implement a USEPA-approved plan that would address stormwater management practices. Best management practices that could be included in that plan are: to capture and isolate surface water and stormwater that has the potential to come into contact with mine waste; to minimize site grading; to install silt fences and stormwater basins to capture stormwater runoff from sloped areas; and to divert stormwater away from construction activities to prevent potential contamination. This plan would also ensure compliance with the Clean Water Act. As I mentioned earlier, to address erosion in the Pipeline Arroyo, United Nuclear 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 from vehicle travel on unpaved roads, wind erosion in disturbed areas, and emissions from mobile sources and construction equipment. United Nuclear has proposed measures in its license application for controlling fugitive dust, including imposing a maximum speed limit of 20 miles per hour on haul and access roads and covering haul trucks. United Nuclear is also proposing to suppress dust with water on haul roads and in excavation areas, placement areas, borrow areas, stockpiles, and screening areas. United Nuclear would also cover soil stockpiles to prevent dust from escaping into the air. 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. This agreement will describe all of the procedures needed to ensure that the sites are protected and that 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 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 therefore be impacted by dust, noise, and traffic. The USEPA is therefore providing voluntary alternative housing options for residents in this community during construction 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 different aspects of the environment. For example, the 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.

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

Chapter 6 includes an evaluation of specific measures that United Nuclear 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 United Nuclear's activities would substantially follow local, State, and Federal agencies' requirements. This chapter also identifies measures proposed by Navajo Nation to reduce impacts. In addition, the Navajo Nation Environmental Protection Agency recommended that, to help preserve the Navajo Culture, culturally important or sacred ceremonies (e.g. blessings by medicine men) should be held before land-disturbing activities begin. United Nuclear 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's proposed environmental measurements and monitoring programs. These programs were designed to ensure that United Nuclear would meet NRC safety regulations, including limits on releases of radiation to air and water, 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 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 the cost-benefit analysis is to disclose major quantitative and qualitative costs and benefits to evaluate the relative merits of various 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 directly quantifiable cost. For example, returning the Mine Site to the Navajo Nation for grazing livestock and growing plants for traditional uses is a 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.

Closing and Contact Information

Before I end, I would like to remind folks how they can access these NRC documents and how they can comment on the draft EIS. The NRC sent copies of the draft EIS to the Octavia Fellin Public Library in addition to copies we mailed out to several households. If you do not have a copy you can call me at 301-415-7317, or you can access a copy of the draft EIS and other related documents and information on our website. The quickest way to get there is to go to the NRC's website at www.nrc.gov and then type United Nuclear Corporation into the main search bar. Scroll down and look for the United Nuclear Corporation – Draft EIS Public Comment and Meetings link; this page will explain how to submit your comments on the draft EIS (and it also includes a link to the report). Comments will be accepted in writing, by email to *UNC-ChurchRockEIS@nrc.gov*, and by phone at *888-672-3425*. We will also post the audio recordings and written scripts of these broadcasts on our website. We are seeking your comments on the draft EIS through May 27, 2021. If you have any questions regarding the NRC's environmental review, you may email me at Ashley.Waldron@nrc.gov. We encourage you to tune into tomorrow's night broadcast where we'll be discussing the NRC's safety evaluation and the following night for a question and answer session. NRC will host a public webinar on April 29 from 6:00 – 9:00 p.m. (MST) where we will accept public comments on the draft EIS. Thank you and good night.