

**Trip Report for U.S. Nuclear Regulatory Commission's Review of United
Nuclear Corporation's Proposed License Amendment Request for
SUA-1475 in McKinley County, New Mexico
Site Visit and Agency Information Gathering Meetings
March 18-22, 2019**

INTRODUCTION

During the week of March 18, 2019, staff of the U.S. Nuclear Regulatory Commission (NRC) staff and its contractor, the Center for Nuclear Waste Regulatory Analyses (CNWRA®), conducted a site visit and information gathering meetings in support of the NRC's environmental review and preparation to develop an Environmental Impact Statement (EIS) for the proposed disposal of uranium mine tailings at the NRC-licensed, former Church Rock Uranium Mill Site (UNC Mill Site) in McKinley County, New Mexico.

NRC received a license amendment request for Source Material License SUA-1475 from United Nuclear Corporation (UNC) dated September 24, 2018 (UNC, 2018a). The license amendment request includes an application document and an Environmental Report (UNC, 2018b). The license amendment request would allow for revisions to the NRC-approved tailings reclamation plan for the NRC-licensed mill tailings disposal area and revisions to the reclamation schedule at the former UNC Mill Site in McKinley County, New Mexico. The license amendment, if approved, would allow UNC to dispose of mine waste from the Northeast Church Rock (NECR) Mine Site within the footprint of the NRC-licensed tailings impoundment at the UNC Mill Site (hereafter referred to as the proposed disposal site).

This trip report summarizes the NRC and CNWRA staff's interactions during meetings with other agencies and the information gathered from those meetings and the site visit. The site visit included a tour of the former UNC Mill Site and the NECR Mine Site and surrounding areas, as explained later in this report. To begin each of the agency and local government meetings, the NRC staff provided a briefing to meeting attendees to familiarize them with the NRC's license application review process for the UNC license amendment request. Then the meetings were opened for discussion and questions.

In addition to the site visit and information gathering meetings held during the week of March 18, 2019, the NRC held public scoping meetings in Gallup, New Mexico, on March 19 and 21, 2019. The EIS scoping meetings are part of the NRC's EIS scoping process that are designed to elicit input from the public and government and private sector agencies and organizations to focus the scope of the NRC's environmental review and impact evaluation on areas of concern. The EIS scoping process helps the NRC staff determine the range of issues, alternatives, and potential environmental impacts to be considered in the EIS and identify significant issues related to the proposed action. Details of the public scoping meetings, as well as the comments received from stakeholders and other interested parties during the scoping process, are addressed in a scoping summary report.

Table 1. NRC and CNWRA Participants in the UNC License Amendment EIS Site Visit and Information Gathering Meetings, March 18–22, 2019	
Staff Member and Title	Role in Environmental Review
U.S. Nuclear Regulatory Commission	
Ashley Waldron, Environmental Project Manager	Environmental Review Branch
Bo Pham, Division Deputy Director	Division of Decommissioning, Uranium Recovery, & Waste Programs
Cinthya Román, Branch Chief	Environmental Review Branch
Scott Burnell, Public Affairs Officer	Office of Public Affairs
James Smith, Safety Project Manager	Uranium Recovery and Materials Decommissioning Branch
Adam Gendelman, Senior Attorney	Office of General Counsel
Pamela Noto, Project Manager	Environmental Review Branch
Center for Nuclear Waste Regulatory Analyses	
Taylor Holt, Engineer	Water Resources, Visual and Scenic, Noise Cumulative Impacts
Miriam Juckett, Senior Program Manager	Senior Program Manager, Public Outreach, NEPA reviewer
Patrick LaPlante, Staff Scientist	Principal Investigator, Public and Occupational Health, Transportation, Measures and Monitoring
Amy Minor, Senior Research Scientist	Principal Investigator, Ecology, Socioeconomics, Environmental Justice
Marla Morales, Senior Research Scientist	Water Resources, Land Use, Geology
Bradley Werling, Senior Research Scientist	Air Quality, Climatology, Cost/Benefit Analysis

MEETING SUMMARIES

Date: Tuesday, March 19, 2019

Government Agency Meeting: U.S. Nuclear Regulatory Commission (NRC), U.S. Department of Energy (DOE), and U.S. Environmental Protection Agency (EPA)

Meeting Location: 301 W. Hill Ave, Room 211, Gallup, New Mexico

Attendees: Sara Jacobs (EPA Region 9), Sean Hogan (EPA Region 9), Cynthia Wetmore (EPA Region 9), Paul Kerl (DOE), and Art Kleinrath (DOE)

NRC and Center for Nuclear Waste Regulatory Analyses Attendees: Bo Pham, Cinthya Román, Adam Gendelman, James Smith, Ashley Waldron, Pam Noto, Ron Linton, Miriam Juckett, and Patrick LaPlante

Items of discussion included the NRC license amendment review timeline, the EPA Comprehensive Environmental Response Compensation and Liability Act (CERCLA) pre-construction process, EPA and DOE role in the license amendment review process, and NRC scoping questions.

The NRC staff described the license amendment review timeline by referring to the NRC's acceptance letter to General Electric dated March 7, 2019 as a preferred schedule that is an objective, but also noted that the actual schedule will depend on alignment between the different agencies involved and technical complexities (NRC, 2018). The NRC staff noted that the NRC safety review will focus on the impact of adding the mine waste on the NRC regulated tailings impoundment at the Church Rock Uranium Mill Site (UNC Mill Site), whereas the Environmental Impact Statement (EIS) will address the environmental impacts of the NRC license amendment action at the tailings impoundment as well as connected actions and activities beyond the tailings impoundment.

EPA staff described the CERCLA pre-construction process. They noted that the UNC Mill Site is listed on the EPA CERCLA National Priority List because of the groundwater contamination, and that requires a consent decree for construction with United Nuclear Corporation that would involve a work plan and court filing that would take approximately 6 months to 1 year to complete. They noted that this could be undertaken by EPA in parallel with the NRC review process. Staff discussed several topics regarding the EPA's CERCLA process for the UNC Mill Site, including EPA's 5-year reviews and the ongoing groundwater corrective action plan.

The NRC staff asked the DOE and EPA participants if there was any interest in becoming cooperating agencies for the development of the EIS. DOE and EPA both expressed interest in being able to comment on the EIS during its development. The NRC staff noted that to become a cooperating agency a Memorandum of Understanding between the agencies would be needed. The NRC indicated that agencies can be involved and comment on the EIS development as part of normal inter-agency interactions (e.g., a "consulting agency") and that would not require the formality of becoming a cooperating agency.

As an outcome of the meeting, EPA planned to set up conference calls to include all three groups (NRC, DOE, and EPA) and potentially other agencies, as needed. EPA and DOE both offered to assist NRC with the EIS development process and answer questions both informally and formally, as needed.

Date: Thursday, March 21, 2019

Agency: Navajo Nation EPA (NNEPA) and Superfund Program

Meeting Location: Building No. 2695 Window Rock Blvd., Window Rock, Arizona

Attendees: Dariel Yazzie, Navajo Nation Superfund Program; Benod Chaudhary, NNEPA remedial project manager; and Oliver Whaley, NNEPA Executive Director

U.S. Nuclear Regulatory Commission (NRC) and Center for Nuclear Waste Regulatory Analyses (CNWRA) Attendees: Ashley Waldron, Cinthya Román, Bo Pham, Adam Gendelman, Jim Smith, Miriam Juckett, and Amy Minor

After the NRC staff provided a brief introduction of the NRC environmental review process, Mr. Dariel Yazzie provided an overview of important aspects of the Navajo culture, particularly with respect to the Diné language, Navajo traditions regarding information sharing and decision making, and the importance of the site to Navajo people and their history. Mr. Yazzie noted that because of the very descriptive nature of the Diné language, scientific terms often do not translate well or accurately, and the NNEPA has been developing a glossary of technical terms for use in communications with Navajo people.

NNEPA stressed the importance of peace within the community through story-telling and understanding rather than an “announce and do” approach. Mr. Yazzie strongly recommended using a Navajo consultant or translator to explain the NRC’s “story” to the people, because the means to the end is as important as (or more important than) agreement on the outcome.

The discussion with NNEPA staff focused on the NRC’s Environmental Impact Statement (EIS) development process and how the NRC may best interact with the Navajo Nation. The NRC staff explained the cooperating agency option. While the NNEPA is very interested in participation and contributing to EIS development, the Navajo culture is less conducive to formal paperwork agreements and prefers a more informal agreement based on trust and personal involvement.

Mr. Yazzie reminded the NRC staff that the Navajo Nation is a sovereign entity, and therefore the NRC should carefully consider interacting with Navajo Nation as a sovereign government just as it would interact with other foreign governments. The Navajo leaders expect that the NRC staff listen, treat the Tribe in a government-to-government capacity, and keep the Tribe informed.

NNEPA stated that the EIS address fundamental law, such as how to protect medicinal herbs and the traditional value of the land. Addressing fundamental law would be helpful for community members to move forward in the healing process associated with historic disturbance of the land, as well as future disturbance related to reclamation. They also explained that there are two primary points of view within the local community: those with an understanding of an agreement with Western science who believe that the mine waste should be removed from Indian Trust lands, and a more traditional group who believe that the act of

mining in the first place hurt the Earth and that the materials should be returned to the Earth. The NNEPA strongly recommended incorporation of cultural components within the NRC's EIS to the greatest extent practicable as a possible form of mitigating impacts on cultural values. This includes, among other things, telling the history of the site from the Navajo perspective as part of the background and recommending cultural resource mitigations (e.g., medicine men blessing the site before groundbreaking).

NNEPA reinforced the community's preferences for in-person meetings, use of translators for some meetings (particularly those with elders present), meetings with Navajo chapter houses, consideration of community-suggested alternatives, and culturally sensitive mitigations. The NRC staff expressed their willingness to think creatively and make efforts to address the concerns. The NRC staff expressed willingness to visit the chapters to hear their stories and explain the project in a way that the community understands.

Agency: McKinley County

Meeting Location: 207 W. Hill Ave, Carlsbad, New Mexico

Attendees: Doug Decker, County Counsel; Billy Moore, Council Member; and Anthony Dimas Jr., County Manager

NRC and CNWRA Attendees: Bo Pham, Ashley Waldron, Pam Noto, Jim Smith, Adam Gendelman, Bradley Werling, Taylor Holt, Pat LaPlante, Scott Burnell, Miriam Juckett, and Amy Minor

CNWRA and NRC staff provided a brief introduction to the NRC's role and environmental review process. County staff expressed interest in becoming either a cooperating or consulting agency. NRC explained the formal process for becoming a cooperating agency as well as the option to become a consulting agency (where no formal agreement would be required), the county staff reaffirmed their interest and preference in being involved and agreed that a consulting agency role was likely appropriate. Mr. Anthony Dimas noted that it was important to the County to understand the roles of the various agencies.

County staff explained that they are "pro-cleanup" when done correctly. In general, impacts to transportation, air, and water are the biggest concerns for the county staff. County staff recommended that NRC staff contact the New Mexico Department of Transportation (NMDOT) Region 6 for consultation on transportation issues because Highway 566 is a state highway. County staff provided contact information for Mr. Larry Maynard (NMDOT staff).

The county staff noted that a local group has requested a moratorium on uranium mining activities and noted that we should look into the Uranium Blue Ribbon Task Force as a party potentially interested in this action.

Mr. Billy Moore worked for United Nuclear Corporation (UNC) and reported to work the day of the July 1979 tailings pond release. Mr. Moore has served as the solid waste manager for the county and is familiar with moving material by truck. The county staff recommended that the EIS thoroughly describe the type of trucks that would be used to transfer the mine waste, what kind of covers would be used during material transport, and other information that would provide the public confidence that the transportation process would be done safely. County staff anticipates questions from the public such as whether protective clothing or masks should be worn during project activities. He also expressed concern about potential disruption the traffic

flow on Highway 566 when material was transported from the Northeast Church Rock (NECR) Mine Site to the UNC Mill Site, including what type of crossings would be needed. Furthermore, Mr. Doug Decker noted that concerns regarding movement of any type of uranium-related material would raise questions with the public regarding emergency management.

County staff explained that the county does not have jurisdiction over the Pipeline Arroyo or any water drainage plans. County staff stated that the US Army Corps of Engineers (USACE) conducted a detailed assessment in 2015 of hydrologic conditions in the past that would provide detailed information about water drainage in the arroyo. Mr. Dimas said that he would provide the NRC staff with the full report.

McKinley County is in the process of updating the county's 5-year plan and anticipates that it will be finalized in summer 2019. The county staff offered to provide the report to the NRC.

The NRC staff asked county staff whether they had concerns regarding potential effects from the workers that would be hired to work on the project. County staff stated that available housing and services are limited in the area. Another consideration county staff pointed out is that if workers do not live in Gallup, the commute to the site one-way could easily be 45 minutes to 1 hour. County staff were not particularly concerned about the economic effect that the project or workers would have on the local area but indicated that economic benefits to UNC directly benefits the county because of the continued tax payments that UNC makes to the county. The employment rate is high within the City of Gallup, and historically consistent with fairly limited fluctuation.

Mr. Dimas noted that the Department of Defense had a spill at Fort Wingate, and the USACE is currently working at that site. Documents related to that site may be useful in preparation of the EIS.

County staff suggested that NRC staff review available documents and maps that would provide ownership and rights of ways in the area. Mr. Dimas offered to make some of these maps available. County staff also noted that the Coal Mesa road would soon be updated.

County staff offered to provide NRC staff with any assistance they could including meeting space in the county courthouse if necessary.

INFORMATION GATHERING AND SITE TOUR OF UNC FACILITIES AND SURROUNDING AREAS – MARCH 20, 2019

Meeting Location: UNC Administrative Building, 1051 Highway 566, Gallup, New Mexico; UNC mill tailings impoundment, NECR Mine Site, surrounding vicinity

Attendees: Ashley Waldron, Pam Noto, Cinthya Román, Jim Smith, Adam Gendelman, Bo Pham, Scott Burnell, Miriam Juckett, Marla Morales, Taylor Holt, Pat LaPlante, Amy Minor, and Bradley Werling

Additional Attendees: Rick Spitz (Wood PLC), driver for Wood PLC, Peter Castiglia (INTERA), Ron Kellermueller (New Mexico Department of Game and Fish), Paul Kerl (DOE), Art Kleinrath (DOE), Marti Poston (NRC Region 4), Sara Jacobs (EPA Region 6), and Cynthia Wetmore (EPA Region 9)

Site visit attendees signed into the visitor log book and gathered in the conference room at UNC's administration building. The conference room had historical and current aerial photographs on the walls of the NECR Mine Site and UNC Mill Site that were useful to review prior to the site visit. After initial introductions and a safety briefing, UNC staff and their contractors, including INTERA and Wood, led NRC and CNWRA staff members, along with Paul Kerl (DOE), Art Kleinrath (DOE), Marti Poston (NRC Region 4), Sara Jacobs (EPA Region 4), Cynthia Wetmore (EPA Region 9), and Ron Kellermueller (New Mexico Department of Game and Fish), on a tour of the former UNC Mill Site, the NECR Mine Site, and surrounding areas. The objective of the site tour was to view the site in context of the proposed project and to observe the natural setting. Specifically, the tour included visits to the NRC-licensed mill tailing impoundment, the jetty area, evaporation ponds southwest of the mill tailings impoundment, the NECR Mine Site including the main and secondary mine shaft locations, vent holes, the Red Water Pond Road, the proposed haul road location, and where haul trucks would cross Highway 566. NRC and CNWRA staff were permitted to walk various areas of the site to make close observations of drainage patterns, rock outcrops, soils, vegetation, and other natural features. Since the proposed modifications to the tailings disposal area and NECR Mine Site (e.g., significant amounts of material placed on top of the impoundment and excavation of up to 1 million cubic yards at the NECR Mine Site), UNC staff and their representatives provided the NRC and CNWRA staff descriptive clarifications of the proposed action and what post-reclamation would look like.

Following is a summary of observations collected by the NRC and CNWRA staff during the site tour and reconnaissance. Photos from the site visit are included in the appendix.

- The first stop was at the top of Dilco Hill north of the tailings disposal area. This location provided a good view of the northern portion of the tailings disposal area and surrounding land uses and topography. Ponding of water and the swales were visible from this location. Bird calls were heard from this location. UNC administrative buildings were visible across Hwy 566. The EPA staff, Wood LPC staff, and INTERA staff pointed out the natural drainages in the surrounding land formations and where surface water flows near and across the tailings disposal area. The drainage of excess water at the tailings impoundment was discussed: initially, dewatering pumps were used, as evidenced by the remaining water dispersion towers, but much less water is removed from the tailings impoundment currently. Mr. Rick Spitz explained that the dewatering efforts at the impoundment yield about 2.5 gallons of water a day.
- The second stop was to the second cell of the tailings disposal area where two rectangular evaporation ponds are located. These ponds are lined and part of the NRC-licensed groundwater corrective action program. The dewatering efforts that at the impoundment that yield about 2.5 gallons of water a day is not enough to maintain the necessary water level in the ponds; therefore, additional water pumped from a nearby well is added to the evaporation ponds. Mr. Spitz stated that the water in the ponds are not sampled, and Jim Smith confirmed that there is no requirement to sample the water in the ponds. The ponds will eventually be covered to complete the surface closure. Also visible at the borders of the impoundments were small building structures.
- The third stop was to the jetty area located southwest of the repository on the southeastern side of Highway 566. The NRC and CNWRA staff observed a drainage pipe under the dirt access road to the jetty, and efforts that had been made in the past to prevent erosion from washing out the road. The EPA and Wood LPC staff pointed out the historical natural drainage channel east of the Pipeline Arroyo. Channel

incision, bank erosion, and undercutting of upper sandstone layers along the historical natural drainage channel was observed cutting eastward toward the impoundment. Large concrete and rebar scraps were observed along the wider portion of Pipeline Arroyo as evidence of prior failed diversion channel modifications. Sandstone, shale, and basalt layers were observed in the deeper portions of the channels, along with a few coal veins. Tamarisk, or salt cedar (an invasive plant), is located in the arroyo. Tamarisk roots in the arroyo capture sediments and block the drainage channel. Rick stated that he had considered introducing biological organisms (e.g., tamarisk beetles) to control the spread of the plants, but that his research suggested the bugs would not be effective.

- The fourth stop was where the haul truck road would cross Highway 566 at Pipeline Road. EPA and Wood LPC staff pointed out low-lying areas that retain water after heavy precipitation. Staff were also able to observe the very low traffic rates: very few vehicles passed through the area during the duration of the visit. UNC staff and their contractor identified a new diverted road that had been built at slightly higher elevation to bypass the low-lying water area which had previously prevented access after rain events.
- The next several stops were on the NECR mine site across Highway 566 and northwest of the UNC Mill Site. The EPA and Wood LPC staff said that the mine waste on the northern side of the mine site would be removed and regraded close to the original elevation before the mine was operational. From the northern portion of the mine site, the boundary of the Navajo reservation was observed less than 100 feet away as well as the homestead of residents who live along Red Water Pond Road. Ravens and a red-tailed hawk were observed at this location.

A shipping container-sized structure was observed on the Navajo side of the property boundary. Rick explained that the structure housed as a bioremediation system associated with Interim Removal Actions (IRA) conducted adjacent to the NECR Mine Site, specifically to clean up diesel contamination.

CNWRA staff inquired whether the area that was part of the IRA was revegetated by hand or by natural regeneration. EPA staff clarified that intentional revegetation efforts were made to, in part, stabilize the slope, but that some challenges were encountered. Because of the north-facing slope, vegetation was difficult to establish, and after some success was achieved prairie dogs moved into the area and destroyed a lot of the vegetation. A plague killed off the prairie dogs in 2017. Since then low shrubs have reestablished on the slope.

- The staff then visited the location of one of the former mine shafts. The Wood LPC staff stated that the mine shaft is not backfilled. The entrance of the mine shaft is sealed with a concrete cap. An embedded steel assembly on top of the cap was used to lower the cap in place. A concrete pad and other concrete remnants were observed in the area around the mine shaft. The EPA and Wood LPC staff stated that mine waste in this area would be surveyed and removed; however, the mine shaft may not be removed and may be subject to State of New Mexico regulations. The EPA and Wood LPC staff pointed out the surface water drainages to the NRC and CNWRA staff members. The group also visited a nearby vent shaft location with a concrete structure that supported vent piping. The EPA and Wood LPC staff stated that, where practical, the vent shafts and associated structures would be disassembled and removed.

- The group assembled in a narrow valley where mine structural waste was placed and covered with soil. Uneconomical mine waste material is also buried in the area that would be removed as part of proposed project. The vegetation in this area had been naturally attenuated (versus purposefully revegetated) over the course of about 15-20 years and represents a mature succession of grasses and shrubs typical of the region.
- The last stop of the site visit was the location where the newly proposed heavy haul truck road would be routed. Rather than obstructing the traffic on Pipeline Road, UNC proposes to traverse part of the NECR Mine Site and cross Highway 566 at one location. The site visit attendees walked much of the proposed route and observed the drainages, soils and geology, and vegetation along the route. The route was partly treed and had less grasses and shrubs compared to the mine shaft and bone yard areas. Small passerine birds were observed flying between the trees. Large boulders were present at the end of the route that was walkable. A distant view of the Church Rock geologic formation is visible from this location.

Following the site visit, because of the relationship that EPA staff have developed with the local community, two NRC staff and one CNWRA staff member, along with P. Castiglia (INTERA), S. Jacobs, and C. Wetmore (EPA), briefly visited a home of a member of the Red Water Pond Road Community. The EPA staff introduced the NRC and CNWRA staff members and explained the roles of the respective organizations.

OTHER AGENCIES CONTACTED BUT NOT VISITED

The NRC and CNWRA staff also made contact or reached out to other agencies or local governments which did not result in meetings during the site visit trip. These interactions are described next.

Agency and Location: New Mexico Environment Department (NMED), Santa Fe, New Mexico

NRC staff spoke with Angelo Ortelli, NMED Superfund Oversight, and he stated that he typically coordinates its work on this site with EPA. Once a meeting was scheduled with EPA on March 19, 2019, the NRC staff determined that it would be up to EPA to invite NMED to attend that meeting. Mr. Ortelli did not attend that meeting, site visit or the public scoping meetings. The NRC staff also contacted Ms. Kirby Olsen with NMED Air Quality Bureau. While Ms. Olsen did not attend face-to-face meetings, she asked for information about the scope of the EIS's non-radiological pollutants. The NRC staff will follow up with NMED regarding questions on the EIS analysis on air quality.

Agency and Location: Mayor of Gallup, New Mexico

The NRC staff contacted the mayor's office by phone and, per the mayor's office request, provided an email with information about the proposed project and public meetings. No response was received by the NRC staff, therefore, no face-to-face meeting occurred during the site visit trip; however, the NRC staff may initiate contact again in the future.

REFERENCES

UNC. "Application for Amendment of USNRC Source Material License SUA-1475, Volume 1 and Volume 2." ML18267A235. Edmonton, Canada: Stantec Consulting Services Inc. September 2018a.

UNC. "Supplemental Environmental Report for the United Nuclear Corporation Site Source Material License Amendment Request." ML18267A235. Albuquerque, New Mexico: Intera Geosciences and Engineering Solutions. September 2018b.