

**REQUEST FOR ADDITIONAL INFORMATION
NUFUELS CROWNPOINT URANIUM RECOVERY PROJECT
LICENSE RENEWAL APPLICATION
RESPONSES**

Permits and Authorizations

RAI-1: Status of Potential, Proposed, Pending, and Approved Licenses and Permits

Please answer clarifying questions or indicate the status of applications for permits or other authorizations, as identified in items 1a through 1g below.

1a: Crownpoint Central Plant Construction

Please indicate when the Crownpoint Central Plant (CCP) construction and operations are expected to begin and identify the permits that would be required from other agencies to begin construction and operation.

1b: Wetlands Determinations and Permitting

Please describe the status of U.S. Army Corps of Engineers (USACE), New Mexico Environment Department Surface Water Quality Bureau (NMED-SWQB), and Navajo Nation consultations and/or permits regarding wetland determinations and impacts. Identify which areas are expected to need wetlands authorizations by USACE, New Mexico, or the Navajo Nation and the status of wetland delineations. Please provide copies of consultation regarding wetlands, including wetland delineations, confirmation that there are no wetlands of interest, and/or approved certifications or permit coverage.

1c: 401 Certification for Water Discharges

Please indicate whether New Mexico requires a certification or waiver under Section 401 of the Clean Water Act for any of the project areas. Provide documentation from the State indicating whether certification or a waiver is required. If applicable, indicate the status of the certification or waiver for each project area.

1d: Groundwater Discharge Permit Application

Provide a copy of the groundwater discharge permit application submitted February 12, 2026, to the NMED Groundwater Water Quality Bureau (GWQB). For the permitting of Section 17 and Unit 1, please indicate whether NuFuels, Inc. (NuFuels) will need to apply for both the NMED-GWQB groundwater discharge permit and the Environmental Protection Agency (EPA) Region 9 underground injection control (UIC) permit, or if the EPA Region 9 UIC permit will replace the NMED-GWQB permit.

1e: Domestic Wastewater Permit

Describe the status of your application for a permit to construct a domestic wastewater system(s) at Section 8. If separate permits will be required for each project area, indicate

whether you have you started the application process for the other project areas and provide applicable correspondence.

1f: Air Quality Permit

Describe the status of the new source review air quality permit application for Section 8 operations. If separate permits will be required for each project area, indicate whether you have started the application process for the other project areas and provide applicable correspondence.

1g: Local and Tribal Permits

Environmental Report (ER) Table 1.3-1 appears to include only State- and Federal-level approvals and consultations. Please indicate whether there are Navajo Nation, other Tribal, and local agency approvals that should be added to the table. Identify the applicable Crownpoint Uranium Project (CUP) project area(s) to which the approvals apply and note the status of each application.

Discussion

ER Table 1.3-1, "Summary of Potential, Proposed, Pending, and Approved Licenses and Permits," identifies permits or approvals that are approved, pending, or to be prepared as of the date of the ER. The table does not appear to identify Tribal or local (e.g., Navajo Nation) permits or approvals that may be required.

Basis

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 51.60(a), a supplemental environmental report for a materials license renewal must update previously submitted information to reflect any significant environmental change. Confirmation that permits, licenses, approvals, certifications, water rights, and related entitlements are representative of current conditions is necessary for U.S. Nuclear Regulatory Commission (NRC) staff to assess potentially significant impacts to surface water, groundwater, wetlands, and water users during the proposed license renewal term.

RAI-1 Response

1a: Construction and operation of the Crownpoint Central Plant (CCP) will start when NuFuels construction at Church Rock Section 8 commences and when market conditions are favorable for uranium production. Buildings and ponds already exist at the Crownpoint project area that will be converted to the CCP. If changes are required to the ponds that involves construction, NuFuels will work with EPA to determine if an application under EPA's Subpart W is applicable.

1b: Once NuFuels has access to the Church Rock Section 8 project area wetland delineations will be completed and NuFuels will work with the U.S. Army Corps of Engineers (USACE) on the jurisdictional determination and other permitting associated with disturbance, as needed. Because jurisdictional determinations are only good for five years, NuFuels will

conduct wetland delineations of the other project areas as operations progress. It should be noted that it is unlikely that wetlands occur within the project areas due to the lack of surface water. For the small portion of the project areas that is located on tribal trust lands, NuFuels may provide the Navajo Nation with the results of the wetland delineation or request that USACE consult with the Navajo Nation. No permits through NMED are required for wetlands.

1c: The NPDES program is currently administered by the United States Environmental Protection Agency (EPA) in the State of New Mexico. The NMED Permitting and Certification Team assists the EPA in implementing the Clean Water Act Section 402 NPDES permit program by reviewing federal permits and preparing Section 401 certifications to certify that the permit also complies with New Mexico law. To date, NuFuels has not submitted any applications under the NPDES program. Please see the response to RAI 10 on the transfer of the NPDES program to NMED.

1d: A copy of the groundwater discharge permit submitted to NMED on February 12, 2026 is provided with this RAI response package. NuFuels will apply for groundwater discharge permits from NMED GWQB for the Crownpoint and Unit 1 project areas approximately 2 to 3 years prior to commencing construction activities within each project area. In addition to the NMED discharge permits, NuFuels will request aquifer exemptions under the Safe Drinking Water Act for each of the project areas.

1e: NuFuels has not submitted an application for a permit to construct a domestic wastewater system at Section 8. Once NuFuels has access to the Church Rock Section 8 project area additional siting design will commence as well as permitting. A domestic wastewater system permit will also be needed at the Unit 1 site, but the application will not be filed until construction is due to commence in the Unit 1 project area.

1f: NuFuels has not submitted a new source review air quality permit application for Section 8. In New Mexico, a permit is only required if the site will produce emissions that exceed the thresholds established in NMAC 20.2.72.200. However, a notice of intent must be submitted to the AQB for review to validate that a permit is not required. Based on this, NuFuels will submit a notice of intent for Church Rock Section 8 approximately 12 months prior to construction. Similar notices will be submitted as construction commences at Crownpoint and Unit 1.

1g: At this time, NuFuels has not identified any Navajo Nation or other Tribal approvals that are required for the Crownpoint Uranium Project. Table 1.3-1 of the ER was updated to include local permits.

Operations

RAI-2: Lixiviant Refortification

Please confirm that barren lixiviant will be refortified and indicate which chemical(s) would be used for this process.

Discussion

Consolidated Operations Plan (COP) Section 1.3 says "barren lixiviant will be returned" with no mention of refortification. COP Section 3.2.1 says "barren water will be refortified with oxygen." COP Section 3.3 says "refortified with requisite chemicals." ER Section 2.1.3.4.4.1 says "[barren] water will be refortified with sodium bicarbonate and/or gaseous carbon dioxide."

Basis

To determine consistency with the guidance provided in NUREG-1569 and NUREG-1748 and to assess the potential impacts associated with license renewal, the NRC needs an accurate and consistent description of the proposed in-situ recovery (ISR) operation.

RAI-2 Response

NuFuels has revised COP Sections 1.3 and 3.2.1 as well as ER Section 2.1.3.4.4.1 to be consistent and indicate that the lixiviant will consist of native groundwater to which gaseous oxygen and gaseous carbon dioxide and/or sodium bicarbonate will be added. In addition, COP Sections 1.3 and 3.2.1 and ER Section 2.1.3.4.4.1 have been revised to state that following ion exchange the lixiviant will be refortified and returned to the well field.

Geology and Soils

RAI-3: Basis for Geology and Soils Current-Conditions Representativeness

The ER states that NuFuels has not conducted construction or other site development activities within the project areas and that the ER relies, in part, on the CUP final environmental impact statement (FEIS) and ISR generic EIS (GEIS). The ER further states that each section incorporates by reference the CUP FEIS and other portions of the administrative record and provides a summary of potentially significant changes between conditions reported in the CUP FEIS and current conditions. For geology and soils, Table 1.1-1 concludes that there has been "No significant change," while also stating that the ER provides updated soil survey data and earthquake analysis and adds potential impacts from hydraulic fracturing.

Please identify which geology and soils information in ER Section 3.3 was updated for the 2025 ER, including any figures; which information was carried forward from the CUP FEIS, ISR GEIS, or other older sources; and why the carried-forward information remains appropriate for evaluating impacts during the proposed license renewal term. If NuFuels relies on updated soil survey information, updated seismic information, recent aerial imagery, lack of site development, field verification, or other current information, identify those sources and explain how they support the conclusions in ER Sections 3.3 and 4.3.

Discussion

ER Section 1 states that no construction or other site development activities have occurred within the Crownpoint Uranium Project areas and that the ER is based on previously published documents and rulings, including the CUP FEIS and ISR GEIS. ER Section 1 also states that the

ER focuses on potentially significant changes to site-specific circumstances since issuance of the CUP FEIS and SUA-1580 and that, where there is no change, the information in the CUP FEIS and ISR GEIS is summarized to provide the basis for the no-change determination. Table 1.1-1 identifies geology and soils as having “No significant change,” while noting that the ER provides updated soil survey data and earthquake analysis and adds potential impacts from hydraulic fracturing. Because the ER relies in part on information developed for earlier environmental reviews, the NRC staff needs the basis for NuFuels’ conclusion that the information in the 2025 ER provides an adequate picture of current conditions.

Basis

In accordance with 10 CFR 51.60(a), a supplemental environmental report for a materials license renewal must contain a description of the proposed action, a statement of its purposes, and a description of the environment affected, and must discuss the environmental impacts of the proposed action. The requested information is needed to determine whether the geology and soils information relied upon in the ER is adequate for the environmental review and is consistent with the information needs and review considerations in NUREG-1748, NUREG-1569, and NUREG-1910.

RAI-3 Response

Geology and soils are discussed in Section 3.2 of the CUP FEIS and Section 3.5.3 of the ISR GEIS. Since the publication of the CUP FEIS and ISR GEIS there have been no new regional geological data in the form of stratigraphy or structure collected or presented in an accredited report such as a publication by the USGS. NuFuels has not completed any site investigations since the publication of the CUP FEIS. However, as part of the LRA NuFuels identified if any additional public information was available and found that the U.S. Department of Agriculture (USDA) completed a soil survey in 2008. Based on this, the updated information was provided in the LRA. The more recent soil surveys are more specific and localized in soil classification compared to data previously submitted for the CUP. While the USDA soil survey data is more detailed it does not result in additional potential impacts to soils as part of the Proposed Action. Therefore, the conclusions in the FEIS and ISR GEIS that are carried forward in the LRA are accurate.

Since the publication of the CUP FEIS, NRC published NUREG-1748 which outlines the technical content of an environmental report. Section 6.3.3 of NUREG-1748 indicates that the licensee should identify the geological, seismological, and geotechnical characteristics of the site and vicinity. While the geological and geotechnical characteristics of the CUP were previously evaluated and described in the CUP FEIS, the seismological characteristics were not and are therefore included in the LRA. Based on this, a section on seismicity was added to the ER which indicates that there have only been 8 earthquakes within 100 km of the project areas between 1990 and 2024. The greatest of which was 3.8 magnitude. In addition, the probability of an earthquake is described in Section 3.3.1.3.4 of the ER.

RAI-4: Pipeline Fault and Potential Preferential Pathways

Please confirm whether the structural geology information presented in ER Sections 3.3.1.1, 3.3.1.3, and 3.3.4.1, especially NuFuels' conclusion that the Pipeline Fault is not present at Church Rock Sections 8 and 17, remains representative of current site conditions and is sufficient to evaluate confinement and potential preferential groundwater pathways. If the understanding of the Pipeline Fault (or other structural features) has changed, please provide an explanation and reference.

Discussion

Section 3.3.4.1 of the ER states that the Pipeline Fault is not believed to exist near the Church Rock Sections 8 and 17 project areas. The ER discussion cites information from the 1997 FEIS and states that a "more recent detailed geologic map discredits the existence of [the Pipeline Fault]." A citation to the recent detailed geologic map is not provided.

The ER also provides a qualitative structural geology discussion but does not clearly state whether the information is current and sufficient for evaluating potential preferential pathways. Because ISR operations rely on containment within the production zone and the integrity of confining units, the NRC staff needs confirmation that the structural information relied upon in the ER remains representative of current site conditions.

Basis

To determine consistency with NUREG-1569 and NUREG-1748 and with 10 CFR 40.32 and Appendix A to 10 CFR Part 40, the NRC staff needs sufficient structural geology information to evaluate potential preferential pathways, vertical confinement, groundwater monitoring, excursion potential, and restoration performance. In accordance with 10 CFR 51.60(a), NuFuels should confirm whether the structural information relied upon in the ER is representative of current conditions and should provide further information regarding the Pipeline Fault, as discussed above.

RAI-4 Response

Structural geology information in ER Sections 3.3.1.1 includes a regional discussion and remains current, while Section 3.3.4.1 has been revised to better describe the Pipeline Canyon fault and geologic maps of the area. The conclusion that the Pipeline Fault is not present at Church Rock Sections 8 and 17 is supported by new geologic modeling using historic drill hole data. This modeling was performed as part of the 2017 RPA NI43-101 study (RPA 2017). The modeling did not demonstrate the existence of the Pipeline Fault. Historic pump testing at Section 8 indicated that the Westwater Canyon Member is effectively confined and isolated from adjacent aquifers (HRI 1988). NuFuels' understanding of the Pipeline Fault has not changed and has been supported by the 2017 geologic modeling.

RAI-5: Documentation of Capable-Fault Data and Seismic-Hazard Conclusions

If available, provide underlying data and/or documentation indicating that the seismicity and seismic-hazard information presented in ER Section 3.3.1.3 and Figures 3.3-4 through 3.3-6 is

representative for purposes of supporting the environmental impact evaluations for the Crownpoint, Unit 1, Church Rock Section 8, and Church Rock Section 17 project areas. Confirm that Figures 3.3-4 through 3.3-6 and the associated seismic-hazard conclusions are based on the current United States Geological Survey (USGS) or other appropriate datasets used in the ER.

ER Section 3.3.1.3.2 states that no capable faults are known to be present within 100 km [62 mi] of the project areas and that the most significant seismic hazard is a randomly occurring or “floating” earthquake. Provide the underlying capable-fault data, map output, database citation, query parameters, or other documentation used to support this conclusion, including the source, date accessed, search radius, fault-screening criteria, and distance from the project areas to the nearest mapped capable faults. If the capable-fault evaluation relied on a USGS web viewer or other online database, provide a citation and sufficient supporting information so NRC staff can verify the conclusion independently.

Discussion

ER Section 3.3.1.3 includes a seismic hazard review, seismicity discussion, historic seismicity near the CUP, and probabilistic seismic hazard analysis. ER Figure 3.3-4 presents seismicity of New Mexico from 1990 through 2024, ER Figure 3.3-5 presents the Uniform Building Code (UBC) seismic zone map, and ER Figure 3.3-6 presents seismic hazard at the project areas. However, the capable-fault conclusion does not appear to be documented with the same level of supporting data as the seismicity and seismic-hazard figures.

ER Section 3.3.1.3.2 states that no capable faults are known to be present within 100 km [62 mi] of the project areas and concludes that the most significant seismic hazard for the project is a randomly occurring or “floating” earthquake. The ER appears to rely on a USGS web viewer or similar source for capable-fault information, but it does not provide the underlying fault data, map, database output, or query information needed to verify the conclusion. Fault location, fault capability, and seismic source characterization are relevant to evaluation of ground shaking and potential effects on ISR-related infrastructure and containment systems.

Basis

In accordance with 10 CFR 51.60(a), a supplemental environmental report for a materials license renewal must provide sufficient information to describe the affected environment and evaluate the environmental impacts of the proposed action. NUREG-1748 and NUREG-1910 identify geologic stability and seismicity as relevant to environmental review for uranium recovery and ISR facilities. The requested information is also needed to support NRC staff’s evaluation under 10 CFR 40.32 and Appendix A to 10 CFR Part 40, including whether seismic hazards could affect facility integrity, well integrity, pond integrity, pipeline failure potential, deep-disposal-well integrity if used, and the potential for releases during construction, operation, aquifer restoration, or decommissioning.

RAI-5 Response

Section 3.3.1.3.2 has been revised to describe the faults associated with earthquakes as Quaternary faults. A quaternary fault is defined as a fault that has been recognized at the surface and that has moved in the past 1.6 million years. These faults are used to identify earthquake hazards. The USGS source for the information is provided in the reference section of the ER.

RAI-6: Hydraulic Fracturing, Formation Parting Pressure, and Injection Pressure Controls

Please confirm whether the ER discussion of prevention and mitigation of hydraulic fracturing is representative of current project plans and current site conditions.

Discussion

The ER states that potential impacts from hydraulic fracturing of wells have been added and describes avoiding impacts by maintaining injection pressure below the fracture gradient of the receiving formation. The ER also states approximate allowable surface pressures of 21 kg/cm² [301 psi] at Crownpoint and Unit 1 and 8 kg/cm² [117 psi] at Church Rock Sections 8 and 17. These issues are consolidated because they all relate to induced fracture control and protection of confining units.

Basis

To determine consistency with NUREG-1569 and compliance with 10 CFR 40.32 and Appendix A to 10 CFR Part 40, NRC staff need to confirm whether the ER information and operating assumptions are representative and adequate to evaluate induced fractures, vertical migration, wellfield containment, groundwater impacts, and adequacy of operating limits.

RAI-6 Response

The ER discussion of prevention and mitigation of hydraulic fracturing is representative of current project plans and current site conditions. In addition, NuFuels will adhere to SUA-1580, license condition 10.3 which states that injection pressures will be maintained at less than formation fracture pressures.

RAI-7: Subsurface Penetrations, Historic Exploration Features, and Church Rock Section 17 Mine Workings

Please indicate whether NuFuels is aware of any mine features, abandoned boreholes, wells, or other subsurface penetrations within or near the Crownpoint, Unit 1, Church Rock Section 8, or Church Rock Section 17 project areas that were not identified in the CUP FEIS, COP, license record, or ER. The response should specifically address the Old Church Rock Mine in Section 17 and any known or suspected mine shafts, ventilation raises, production shafts, tunnels, stopes, collapsed areas, mine pools, wells, or other subsurface penetrations that could affect ISR containment, monitoring, restoration, or reclamation. Explain whether historical mine workings and other subsurface penetrations could act as preferential

pathways, storage zones, hydraulic sinks or sources, vertical migration pathways, lateral migration pathways, subsidence features, or restoration challenges.

Discussion

ER Section 2.1.3.2.3 identifies the Old Church Rock Mine in Section 17 and states that the Church Rock Section 17 project area includes previously disturbed land associated with the mine. The ER indicates that, for Church Rock Section 17, production-zone monitor wells will be located by treating historical production mine workings like injection or production wells. Historic mine workings, abandoned boreholes, wells, and other penetrations may provide preferential pathways for vertical or lateral migration, create storage zones or hydraulic sinks and sources, and/or complicate restoration or stability monitoring.

Basis

In accordance with 10 CFR 51.60(a), a supplemental environmental report for a materials license renewal must provide sufficient information to describe the affected environment and evaluate the environmental impacts of the proposed action. The NRC staff needs an adequate basis for the environmental review under 10 CFR Part 51 and information that is consistent with the review considerations in NUREG-1569, NUREG-1748, and NUREG-1910.

RAI-7 Response

All of the known mine features, abandoned boreholes, wells, or other subsurface penetrations within or near the Crownpoint, Unit 1, Church Rock Section 8, or Church Rock Section 17 project areas have been documented in the license record, CUP FEIS, COP, or ER. NuFuels has not completed any additional testing or analysis on these features. Section 4.3.1.1 of the CUP FEIS describes the potential impacts from the exploration holes and mine shafts at the Crownpoint project area. NuFuels acquired the exploration hole data when the project was acquired from HRI. In addition, the CUP FEIS states that the mine shafts at the Crownpoint project area were never opened to the Westwater and therefore do not present an avenue for information transfer of groundwater. Section 4.3.1.2 of the CUP FEIS has a discussion of historic penetrations at the Unit 1 project area. During acquisition of the project, NuFuels received all of the Mobil Oil Company's records, which include all plugging reports. The CUP FEIS states that all plugging at the site was in compliance with the New Mexico State Engineers Regulation NMSA, Section 69-3-6. Section 4.3.1.3 of the CUP FEIS provides a detailed discussion on the potential impacts associated with the mine workings in Church Rock Section 17. The CUP FEIS states that although the mine workings may form preferential pathways for lixiviant movement away from the well field, the monitoring program would detect excursions which would be corrected. In addition, SUA-1580 license condition 10.31 requires NuFuels to a Westwater Canyon aquifer step-rate injection (fracture) test within the Church Rock site boundaries, but outside future well field areas. The license condition also requires one test at the Unit 1 or Crownpoint site prior to injection.

RAI-8: Background Soil Radiological Conditions and Legacy Mine-Related Materials

Please confirm whether the ER information on background soil radiological conditions, legacy mine-related materials, contaminated or potentially contaminated soils, mine spoils, waste-rock areas, former pond areas, tailings-related materials, and other historical uranium-mining features remains representative of current conditions within and near the project areas. The confirmation should specifically address whether statistically defensible background soil radionuclide concentrations have been established for each project area, including radium-226 and other relevant radionuclides, and whether legacy materials will be avoided, remediated, managed, or incorporated into background determinations.

Discussion

ER Section 2.2.3.3 discusses geology and soils cumulative considerations and recognizes that historical uranium recovery affected soils, including at Church Rock Section 17. The ER states that NuFuels is working with EPA and Navajo EPA to clean up spoilage in Section 17 prior to construction and that residual impacts from historical uranium recovery will be considered when determining background radionuclide levels in soils.

Basis

This information is necessary to support the assessment of impacts and to evaluate compliance with Appendix A to 10 CFR Part 40, including soil-cleanup standards for radium-226 where applicable. In accordance with 10 CFR 51.60(a), NRC staff need demonstrably representative information to evaluate potential impacts to soils, surface water, air quality, ecological resources, public health, and waste management. NUREG-1748 and NUREG-1910 identify affected-environment characterization, impact evaluation, and mitigation as relevant to NRC's environmental review.

RAI-8 Response

Sections 2.2.3.3 and 3.12.2.2 of the ER have been revised to include a summary of the removal assessment report prepared by TetraTech in 2023. The report describes the results of the removal assessment field sampling completed at the Old Church Rock Mine in 2022 and the cleanup activities that are under the oversight of the EPA and the Navajo Nation Environmental Protection Agency. The Administrative Settlement Agreement and Order on Consent for Interim Removal Action¹ requires gamma scanning and sampling prior to performing excavation and construction activities to refine the excavation footprint and gamma scanning and sampling of excavated areas prior to adding backfill/cover soil to the area. Gamma scanning and sampling would also be completed following cleanup to establish updated baseline radiological soil concentrations.

¹ U.S. EPA Region 9, Administrative Settlement Agreement and Order on Consent for Interim Action Removal. CERCLA Docket No. 2026-06. <https://www.epa.gov/system/files/documents/2026-04/cercla-docket-2026-06-ocrm-site-asaoc-2026-04-01.pdf>

Prior to construction in all project areas, NuFuels will conduct radiological soil surveys to establish background radiological soil concentrations. These surveys would cover each of the project areas and would incorporate the results of all cleanup activities.

RAI-9: Soil Survey, Disturbance Estimates, and Topsoil Management Assumptions

Please identify (1) the soil survey source and date used for the 2025 ER (Sections 3.3, 4.3, 5.3, and 2.1.3.6, and Figures 3.3-8 through 3.3-10), (2) whether any site-specific field verification of soil map units or topsoil salvage suitability has been completed or is planned before construction, and (3) whether the anticipated disturbance estimates by project area remain consistent with current wellfield, road, pipeline, pond, satellite facility, and central processing facility layouts.

If this information will be addressed through other regulatory mechanisms, such as construction stormwater permitting or a stormwater pollution prevention plan, indicate whether those mechanisms will require a detailed topsoil-management design before land disturbance (rather than only during decommissioning or reclamation).

Discussion

The ER states that updated soil survey data were provided for the geology and soils affected-environment discussion and includes soil-unit figures for the Crownpoint, Unit 1, and Church Rock Sections 8 and 17 project areas. The ER also provides anticipated disturbance estimates and generally describes topsoil handling, final contouring, revegetation, and reclamation. The soils impact evaluation depends on the soil map-unit information and on whether the disturbance footprints and topsoil-management assumptions reflect current facility layouts and construction plans.

Basis

In accordance with 10 CFR 51.60(a), a supplemental environmental report for a materials license renewal must provide sufficient information to describe the affected environment and evaluate the environmental impacts of the proposed action. The requested information is needed to determine whether the soils and disturbance information relied upon in the ER is sufficient for the NRC's environmental review under 10 CFR Part 51 and is consistent with review considerations in NUREG-1748 and NUREG-1910.

RAI-9 Response

The soils data provided in Section 3.3 and depicted on Figures 3.3-8 through 3.3-10 were obtained from the U.S. Department of Agricultural, Natural Resources Conservation Service (USDA-NRCS). As described in the response to RAI-3, the U.S. Department of Agriculture (USDA) completed a soil survey in 2008 and this data is more specific and localized in soil classification compared to data previously submitted for the CUP. Prior to surface disturbing activities NuFuels will conduct soil surveys to determine the topsoil salvage suitability. All topsoil will be stripped to the appropriate depth and stockpiled. This information will also be addressed in the stormwater pollution prevention plan that will be completed as part of the

NPDES as described in the response to RAI 10. All anticipated disturbance estimates in the ER are accurate for each project area.

RAI-10: Erosion, Drainage, and Stormwater-Control Assumptions

NuFuels states in ER Table 1.1-1 that changes to the ER compared to the CUP FEIS include revisions of the “NuFuels plan to limit disturbance within the project areas to well fields and processing facilities” and of “estimated disturbance areas for each project.” Please identify the erosion and drainage assumptions in ER Sections 4.3, 4.4, 5.3, and 5.4 for which NuFuels verified continued applicability compared to current disturbance footprints, wellfield layouts, access roads, pipelines, retention ponds, satellite facilities, the CCP, topsoil stockpile areas, diversion channels, and reclaimed surfaces.

Discussion

The ER includes mitigation measures for geology and soils impacts, including soil loss, soil compaction, and soil contamination, and includes water-resource mitigation measures for erosion, sedimentation, flood protection, drainage control, and stormwater-related impacts. These issues are directly tied to current site conditions and current disturbance layouts because erosion, runoff, sediment transport, and drainage alteration depend on the location and sequencing of wellfields, roads, pipelines, ponds, processing facilities, topsoil stockpiles, and reclaimed areas.

Basis

In accordance with 10 CFR 51.60(a), a supplemental environmental report for a materials license renewal must provide sufficient information to describe the affected environment and evaluate the environmental impacts of the proposed action. The information is needed to determine whether the erosion, drainage, and stormwater-control assumptions relied upon in the ER provide an adequate basis for NRC’s environmental review under 10 CFR Part 51 and are consistent with the review considerations in NUREG-1569, NUREG-1748, and NUREG-1910.

RAI-10 Response

The ER includes a general discussion on mitigation measures for geology and soils based on preliminary designs. Prior to commencing construction, NuFuels will design each of the project areas taking into account erosion and drainage. In addition, NuFuels will submit a National Pollutant Discharge Elimination System (NPDES) application to the EPA for coverage under the Construction General Permit (CGP) for stormwater discharge. The CGP will include a site drainage map, outfall locations, as well as a stormwater pollution prevention plan (SWPPP) that identifies best management practices for erosion and sediment control. It should be noted that the New Mexico Environment Department (NMED) is pursuing delegation of the federal permitting program from the EPA under the authority of the New Mexico Pollutant Discharge Elimination System (NMPDES) Act. The New Mexico delegated program will be known as the NMPDES Program and will regulate point source discharges into waters of the United States (WOTUS). The NMED Surface Water Quality Bureau (SWQB) is also developing the State Permitting Program under the authority of the New Mexico Water Quality Act to

regulate both point source and dredge and fill discharges into Surface Waters of the State (SWOTS). SWQB is in the process of developing a publicly accessible mapping application to help make preliminary determinations on whether waters will be permitted under federal (EPA or USACE) or state (NMED) authority. The current timeline on the NMED website indicates that initial program rollout will occur in 2027.

RAI-11: Mitigation Measures for Geology and Soils

Please indicate whether NuFuels has information from other projects that NRC staff could use to evaluate the effectiveness of the proposed geology and soils mitigation measures presented in ER Sections 4.3 and 5.3. Please indicate whether any of the geology and soils mitigation measures relied upon in the ER are intended to be enforceable license conditions or permit conditions, or if they are design commitments, standard operating procedures, best management practices, or general environmental commitments.

Discussion

ER Section 2.2.3.3 discusses cumulative geology and soils impacts, ER Section 4.3 discusses potential impacts, and ER Section 5.3 identifies mitigation measures for geology and soils. The NRC staff needs to determine whether the mitigation measures relied upon in the environmental review would become requirements in permits issued by other agencies.

Basis

In accordance with 10 CFR 51.60(a), current or demonstrably representative information is needed to evaluate significant environmental changes during the proposed renewal term. NUREG-1748 and NUREG-1910 identify mitigation as part of NRC's environmental review.

RAI-11 Response

The mitigation measures for geologic impacts described in Section 5.3.1 would be license conditions by NRC (maximum injection pressure for Class III wells) and permit conditions by NMED (maximum injection pressure for Class I wells). The mitigation measures for soil impacts described in Section 5.3.2 would be part of the SWPPP described in the response to RAI-10. The SWPPP is required by the EPA as part of the NPDES CGP. In addition, mitigation measures relating to soil contamination would be required by the NRC and the decommissioning plan required by NRC would ensure that all soils meet the cleanup criteria in 10 CFR 40, Appendix A.

Water Resources

RAI-12: Representativeness of Prior Groundwater Flow and Transport Modeling for Current Impact Conclusions

Please explain the basis for NuFuels' conclusion that the groundwater flow and transport modeling and quantitative analyses referenced in the ER, including modeling conducted in prior periods such as 1993 and 2009, provides a representative basis for the impact

conclusions in ER Section 4.4 for the Crownpoint, Unit 1, Church Rock Section 8, and Church Rock Section 17 project areas.

Describe any plans to update the modeling, perform model verification, conduct sensitivity analyses, or provide additional quantitative evaluation before ISR operations begin. Identify whether any planned modeling or verification will include new or replacement municipal wells and updated water-use assumptions.

Discussion

ER Section 4.4.2.1.1.2.1 discusses potential impacts to the production and surrounding aquifers and references modeling or quantitative analysis used to evaluate groundwater impacts, including cumulative drawdown. ER Section 3.12.2.2 references a URI 2009 evaluation of potential transport of constituents through pathways including surface water, groundwater, and wind. Earlier modeling and quantitative analyses appear to provide part of the basis for current ER conclusions regarding groundwater quantity, groundwater quality, constituent transport, and cumulative impacts. Current and projected water-use conditions may differ from the conditions assumed in older modeling, including changes associated with municipal pumping, replacement municipal wells, and the Navajo-Gallup Water Supply Project.

Basis

In accordance with 10 CFR 51.60(a), a supplemental environmental report for a materials license renewal must provide sufficient information to describe the affected environment and evaluate the environmental impacts of the proposed action. The requested information is needed to determine whether the groundwater flow and transport analyses relied upon in the ER provide an adequate basis for NRC's environmental review under 10 CFR Part 51 and are consistent with the review considerations in NUREG-1569, NUREG-1748, and NUREG-1910.

RAI-12 Response

The groundwater flow and transport modeling and quantitative analyses referenced in the ER is the most current information that NuFuels has at this time. The 1993 report prepared by Geraghy & Miller, Inc (NRC Accession Number ML20058L193) describes that the model was based on pumping tests completed at both the Crownpoint and Church Rock projects. In accordance with license condition 10.23 of SUA-1580, NuFuels will conduct groundwater pump tests prior to injection of lixiviant in a well field. In addition, license condition 10.31 requires NuFuels to conduct a Westwater Canyon aquifer step-rate injection (fracture) test within the Church Rock site boundaries, but outside future well field areas, as well as at the unit 1 or Crownpoint site. License condition 10.32 also requires NuFuels to conduct sufficient pumping tests to determine if the Cow Springs aquifer beneath each of the sites is hydraulically confined from the Westwater Canyon aquifer.

Section 3.4.3.1.1 of the ER has been updated to reflect the most current information on the Navajo-Gallup water supply project. As described in the ER, the Bureau of Reclamation is commencing construction of the sublaterals to the Town of Crownpoint in the summer of 2026.

At this time, it is unknown when the Town of Crownpoint will switch from water supply wells to the water supply pipeline. However, the Bureau of Reclamation indicates that the final project completion is expected by the end of 2029.

It should be noted that the discussion in ER Section 3.12.2.2 is related to surface soil clean up activities at the OCRM. These activities are under the oversight of the EPA and the Navajo Nation Environmental Protection Agency and not related to NuFuels Crownpoint Uranium Project or ISR mining in Church Rock Section 17.

RAI-13: Potentiometric Surfaces, Hydraulic Gradients, and Municipal Pumping Effects

Please confirm whether the potentiometric surfaces, groundwater elevations, hydraulic gradients, vertical-gradient interpretations, and municipal pumping assumptions presented or relied upon in the ER are representative of current hydraulic conditions for each relevant aquifer at the Crownpoint, Unit 1, and Church Rock Sections 8 and 17 project areas. Identify any areas for which information in the ER may not be representative for affected aquifers, wells, project areas, pumping assumptions, or time periods.

Discussion

ER Section 3.4.3.3.3 presents groundwater levels for Church Rock Sections 8 and 17. ER Section 3.4.3.1.1 discusses the Navajo-Gallup Water Supply Project, and ER Section 5.4.2.1 discusses groundwater quantity mitigation, including replacement of municipal wells. ER Section 4.4.2.1.1.2.1 discusses potential impacts to production and surrounding aquifers and references prior modeling and assumptions. The CUP FEIS identified the influence of Crownpoint municipal pumping on groundwater gradients and flow directions. NRC staff need confirmation that historical gradients and flow interpretations are representative of current and projected conditions, including the influence of municipal pumping and planned replacement wells.

Basis

In accordance with 10 CFR 51.60(a), NRC staff must evaluate whether significant environmental changes have occurred since the CUP FEIS. NUREG-1569 identifies groundwater flow direction, hydraulic gradients, aquifer properties, and nearby pumping stresses as important for evaluating ISR wellfield design, excursion monitoring, containment, restoration, and impacts to groundwater users. Confirmation of representativeness is necessary to assess potentially significant groundwater impacts during the proposed license renewal term.

RAI-13 Response

The potentiometric surfaces, groundwater elevations, hydraulic gradients, vertical-gradient interpretations, and municipal pumping assumptions referenced in the ER is the most current information that NuFuels has at this time. As indicated in the project schedule, NuFuels plans to conduct ISR operations first in Church Rock Section 8. Based on this, NuFuels will provide updated information to the NRC as it becomes available.

RAI-14: Hydrogeologic Framework, Aquifer Properties, and Aquifer Confinement

Please confirm whether the hydrogeologic framework, aquifer-property data, and aquifer-confinement interpretations presented or relied upon in the ER are representative of current site conditions. This confirmation should address the Westwater Canyon, Dakota Sandstone, Brushy Basin "B" Sand, Cow Springs, Gallup Sandstone, and intervening aquitards, as applicable to each project area. If applicable, identify where historical pump tests, geophysical logs, cross sections, or confinement interpretations may no longer bound current conditions.

Discussion

ER Section 3.3, "Geology and Soils," presents the geologic and stratigraphic setting, and ER Section 3.4.3 presents groundwater resources. ER Section 5.4.2.2 discusses pump tests as a mitigation measure for groundwater quality. The ER relies on historical characterization and prior aquifer tests to support interpretations of aquifer properties and confinement. The ER also states that Cow Springs monitoring would not be conducted unless vertical connection is found during confinement testing. Because ISR containment and restoration depend on the integrity of the hydrogeologic framework, NRC staff need confirmation that the existing aquifer-property and confinement information remains representative.

Basis

To determine consistency with NUREG-1569 and 10 CFR 40.32 and Appendix A to 10 CFR Part 40, NRC staff need confirmation that the hydrogeologic framework, aquifer properties, and confinement interpretations are current or demonstrably representative. This confirmation is necessary to evaluate potential vertical excursions, monitoring design, ISR solution control, restoration feasibility, and potential impacts to underground sources of drinking water (USDWs) and water-supply wells.

RAI-14 Response

The hydrogeologic framework, aquifer-property data, and aquifer-confinement interpretations presented or relied upon in the ER is the most current information that NuFuels has at this time. As indicated in the project schedule, NuFuels plans to conduct ISR operations first in Church Rock Section 8. Based on this, NuFuels will provide updated information to the NRC as it becomes available.

RAI-15: Groundwater User Inventory and Receptor Identification

Please clarify whether NuFuels updated the groundwater user inventory and receptor identification information presented in ER Sections 3.4.3.2.2, 3.4.3.3.2, and 4.12.1.1.2.3.2, and ER Tables 3.4-10, 3.4-11, and 3.4-15, for the 2025 ER. If NuFuels updated the inventory, please identify the data sources, date of the search or verification, search area, agencies contacted, and methods used to confirm registered wells, unregistered wells, groundwater rights, actual groundwater use, and receptor locations.

If NuFuels did not update the inventory beyond a records search, please provide a current groundwater-user and receptor inventory for the Crownpoint, Unit 1, Church Rock Section 8, and Church Rock Section 17 project areas and the surrounding 3.2 km [2 mi] review areas. The updated or verified inventory should identify, if available, municipal, domestic, agricultural, livestock, industrial, Tribal, and other groundwater users; withdrawal rates; usage patterns; populations served; aquifer completions; well construction; screened intervals; current operational status; water quality; receptor locations; and whether each receptor is connected to or independent of public water-supply systems.

Please reconcile the groundwater-user inventory with current land use information, including the ER's identification of a new residence within the Church Rock Section 17 area. Identify whether any information on wells, receptors, groundwater uses, aquifer completions, screened intervals, or exposure pathways is uncertain, and indicate whether NuFuels would verify the information before construction or operation.

Discussion

The ER states that NuFuels conducted an updated groundwater rights search within and 3.2 km [2 mi] surrounding each project area and that no new wells were identified. ER Figures 3.4-4 and 3.4-5 identify groundwater rights and unregistered wells, and the ER appears to rely on recent records-based sources, including NMOSE 2024, NNDWR 2025, and NTUA 2024 information for the Mariano Lake, Pinedale, and Church Rock public water distribution system. The NRC staff is unable to determine whether NuFuels' 2025 groundwater user inventory was limited to records searches or whether NuFuels also verified actual conditions.

Basis

In accordance with 10 CFR 51.60(a), a supplemental environmental report for a materials license renewal must provide sufficient information to describe the affected environment and evaluate the environmental impacts of the proposed action. The requested information is needed to determine whether the groundwater-use and receptor information relied upon in the ER provides an adequate basis for NRC's environmental review under 10 CFR Part 51 and is consistent with the review considerations in NUREG-1569 and NUREG-1748.

[RAI-15 Response](#)

The 2025 ER included updated information on groundwater use inventory and receptors, as available. Tables 3.4-10 and 3.4-15 provide updated groundwater rights for the Crownpoint and Unit 1 Project Areas and Church Rock Sections 8 and 17 Project Areas, respectively. Data for these tables relied on publicly available data. References are provided with each table. No new public information was available to update Table 3.4-11 and NuFuels was not able to confirm the information with NTUA or BIA. Dwellings depicted in Figures 3.1-4 and 3.1-7 of the ER were confirmed using GoogleEarth and some dwellings were field verified by NuFuels.

Tables 3.4-10 and 3.4-15 have been updated to include additional information as requested in this RAI, based on publicly available information.

RAI-16: Water-Balance and Liquid-Effluent Disposal-Capacity Assumptions

Please verify the ER's assumptions are appropriate regarding proposed injection and production rates, process bleed, restoration pumping, reverse osmosis (RO) treatment, RO product-water reuse or disposal, brine generation, evaporation, lined retention pond capacity, potential deep-disposal volumes, stormwater management, consumptive water use, and overlapping operation and restoration activities (ER Sections 2.1.3.4.2, 2.1.3.4.4.4, 2.1.3.5, 2.1.3.7, 4.4.2, and 5.4.2). Identify whether the ER water-balance assumptions reflect the current project schedule, current facility layouts, current restoration approach, current liquid-effluent management strategy, current water-supply assumptions, the Navajo-Gallup Water Supply Project, and replacement of Crownpoint municipal wells.

If the water-balance or disposal-capacity assumptions were carried forward from older license documents, prior modeling, the CUP FEIS, the COP, or earlier design assumptions, please identify the source and explain why those assumptions are representative of current project plans. If any assumptions have changed, please identify the affected ER sections and indicate whether NuFuels will provide updated water-balance and disposal-capacity information before construction or operation.

Discussion

ER Section 2.1.3.4.2 describes injection and production and states that the maximum flow rate at each processing facility will be 15,140 Lpm [4,000 gpm], exclusive of restoration flow. ER Section 2.1.3.4.4.4 describes management of process bleed and other liquid effluents. ER Section 2.1.3.5 describes aquifer restoration, including groundwater sweep, RO treatment, brine concentration, restoration demonstration, and stability monitoring. ER Section 2.1.3.7 describes effluents and waste management, including process bleed, restoration water, RO brine, product water, lined retention ponds, and potential deep-well disposal. ER Sections 4.4.2 and 5.4.2 discuss groundwater impacts and groundwater mitigation.

The NRC staff is not able to determine whether the ER's water-balance and disposal-capacity assumptions are representative of current project plans. Process bleed and restoration pumping affect groundwater consumption and hydraulic containment. RO product-water reuse, brine generation, evaporation, and deep-disposal assumptions affect liquid-effluent disposal capacity and waste management. Lined retention pond capacity and stormwater volumes affect potential surface-water and waste-management impacts. Overlapping operation and restoration periods could increase total water handling and disposal demands beyond those evaluated for individual project phases.

Basis

In accordance with 10 CFR 51.60(a), a supplemental environmental report for a materials license renewal must provide sufficient information to describe the affected environment and evaluate the environmental impacts of the proposed action. The requested information is needed to determine whether the water-balance and disposal-capacity assumptions relied upon in the ER provide an adequate basis for NRC's environmental review under 10 CFR Part

51 and are consistent with the review considerations in NUREG-1569, NUREG-1748, and NUREG-1910.

RAI-16 Response

The ER water-balance assumptions reflect the current project schedule, current facility layouts, current restoration approach, current liquid-effluent management strategy, current water-supply assumptions, the Navajo-Gallup Water Supply Project, and replacement of Crownpoint municipal wells. Currently, the only change to the water balance is associated with the water supply pipeline. The Bureau of Reclamation estimates that final project completion will occur by the end of 2029 although construction has yet to commence on the sublaterals connecting the water supply pipeline to the Town of Crownpoint. Based on this, it is conservative to assume that NuFuels will still be required to replace the Crownpoint municipal wells. Section 4.3.1 of the COP describes the liquid 11e.(2) waste disposal options and states that “as determined by the Commission in 2000, restoration fluids are 11e.(2) byproduct material and will be disposed of in accordance with NuFuels commitments, including but not limited to, brine concentration, evaporative waste retention ponds, and deep well disposal or a combination of these methods.” NuFuels is committed to ensuring that the operations and restoration schedules align so that there is sufficient disposal capacity.

RAI-17: Updated Baseline Groundwater Conditions and Representativeness of Historical Data

Please confirm whether the groundwater-level and groundwater-quality baseline information presented in ER Sections 3.4.3 and 6.2, and ER Tables 3.4-2 through 3.4-14, is representative of current groundwater conditions for the Crownpoint, Unit 1, Church Rock Section 8, and Church Rock Section 17 project areas. If NuFuels relies on historical baseline data, please confirm whether those historical data are representative of current affected-environment conditions, excursion indicators, upper control limits, target restoration values, impact analyses, and monitoring requirements.

Discussion

ER Section 3.4.3, “Groundwater,” presents groundwater resources, groundwater quality, groundwater use, and groundwater levels for the project areas. ER Section 3.4.3.2 discusses Crownpoint and Unit 1 groundwater, while ER Section 3.4.3.3 discusses Church Rock Sections 8 and 17. ER Tables 3.4-2 through 3.4-14 summarize water quality for relevant aquifers. ER Section 6.2.1 discusses baseline physiochemical monitoring, and ER Section 6.2.2 discusses operational physiochemical monitoring. The ER acknowledges that some groundwater information for Crownpoint and Unit 1 is based on baseline sampling completed for the original license application in the early 1990s, and some information is derived from earlier data.

Basis

To determine consistency with NUREG-1569, NUREG-1748, and NUREG-1910 and with 10 CFR 40.32, Appendix A to 10 CFR Part 40, and 10 CFR 51.60(a), NRC staff need confirmation that

baseline groundwater information is demonstrably representative. This confirmation is necessary to evaluate the affected environment, groundwater impacts, monitoring, excursion detection, restoration criteria, and potential effects on USDWs, municipal wells, domestic wells, livestock wells, and other groundwater users.

RAI-17 Response

The groundwater-level and groundwater-quality baseline information in the ER is the most current information that NuFuels has at this time. As indicated in the project schedule, NuFuels plans to conduct ISR operations first in Church Rock Section 8. Based on this, NuFuels will provide updated information to the NRC as it becomes available. It should be noted, that NuFuels anticipates that the historic data is representative of current affected environment conditions because the Westwater Formation has not been stressed by any other sources since baseline water level and groundwater quality were obtained.

Excursion parameters and upper control limits for the Crownpoint Uranium Project are described in Section 2.1.3.4.3 of the ER and Section 8.6.4 of the COP. Target restoration values are described in Section 2.1.3.5.1.1 of the ER and Section 8.6.3 of the COP in addition to SUA-1580 license condition 10.21. Monitoring requirements associated with excursion monitoring are described in ER Section 2.1.3.4.3 and COP Section 8.7.

RAI-18: Surface-Water Hydrology, Surface-Water Quality, and Surface Water-Groundwater Interaction

Please confirm whether the surface-water hydrology, surface-water quality, floodplain, drainage, arroyo, scour, erosion, and surface water-groundwater interaction information presented in ER Sections 3.4.1, 4.4.1, and 5.4.1 is representative of current site conditions for the Crownpoint, Unit 1, and Church Rock Sections 8 and 17 project areas. If applicable, identify where prior hydrologic analyses do not bound current drainage, arroyo morphology, flood, scour, erosion, or surface water-groundwater pathway conditions.

Discussion

ER Section 3.4.1 discusses surface water, including regional surface water, Crownpoint and Unit 1, and Church Rock Sections 8 and 17. ER Section 3.4.1.3.1 states that a prior hydrologic analysis was completed as part of the license application and that the unnamed arroyo within Church Rock Sections 8 and 17 has changed since publication of the CUP FEIS, prompting reanalysis. ER Section 4.4.1 discusses potential surface-water impacts, and ER Section 5.4.1 discusses mitigation of surface-water impacts. NRC staff need confirmation that drainage, arroyo morphology, flood inundation, scour, erosion, surface-water quality, and surface water-groundwater interaction are representative of current conditions during the proposed renewal term.

Basis

In accordance with 10 CFR 51.60(a), NRC staff must evaluate whether significant environmental changes have occurred since the CUP FEIS. NUREG-1569 and NUREG-1910 identify surface-water hydrology, flood protection, facility siting, surface-water quality, and

contaminant pathways as relevant to evaluating potential environmental impacts from ISR construction, operation, restoration, and decommissioning.

RAI-18 Response

The surface-water hydrology, surface-water quality, floodplain, drainage, arroyo, scour, erosion, and surface water-groundwater interaction information presented in ER is the most current at this time. As NuFuels develops each project area additional site design will be completed that will include analysis of surface water features. SUA-1580 license condition 10.26 requires NuFuels to provide NRC with detailed information on the hydrologic site characteristics including principal water courses and drainage features, drainage basin characteristics, etc. As described in Section 3.4.1.3.1, in 2011 WWC Engineering completed a HEC-RAS analysis of the unnamed arroyo crossing the Church Rock Section 8 and 17 project areas for comparison to the previous study completed in 1997. The results showed that the flood inundation boundary did not differ from the 1997 study. Based on this, it is unlikely that current site conditions would require reanalysis.

RAI-19: Aquifer Restoration, Post-Restoration Stability, and Long-Term Water Quality

Please confirm whether the aquifer restoration demonstration design, restoration schedule, restoration time frames, target restoration values, stability-monitoring approach, rebound assumptions, and long-term groundwater-quality predictions presented in ER Sections 2.1.3.1, 2.1.3.5, 5.4.2.2.3, and 6.2.2.1.2 are representative of current site conditions and current restoration expectations. This confirmation should address the Church Rock Section 8 restoration demonstration and extrapolation of demonstration results to Church Rock Section 17, Unit 1, and Crownpoint.

Discussion

ER Section 2.1.3.5 describes aquifer restoration activities, target restoration goals, target restoration values, groundwater sweep, reverse osmosis, brine concentration, aquifer restoration demonstration, and aquifer restoration progress and stability monitoring. ER Section 2.1.3.1 presents aquifer restoration time frames ranging from approximately 2.5 to 13.3 years. ER Section 5.4.2.2.3 discusses aquifer restoration as mitigation, and ER Section 6.2.2.1.2 discusses aquifer restoration monitoring. NRC staff need confirmation that the restoration assumptions, time frames, and stability conclusions are representative of current geochemical and hydrogeologic conditions.

Basis

To determine consistency with NUREG-1569, NUREG/CR-6870, Appendix A to 10 CFR Part 40, and SUA-1580 license conditions, NRC staff need confirmation that restoration and stability information is representative of current conditions and presents an adequate description of the proposed license renewal activities.

RAI-19 Response

To the best of NuFuels knowledge, the restoration assumptions, time frames, and stability conclusions in the ER are representative of current geochemical and hydrogeologic conditions. License condition 10.28 of SUA-1580, indicates that prior to commencing operations, NuFuels must complete an aquifer restoration demonstration at the Church Rock Section 8 project area to determine the number of pore volumes that will be required to restore a production-scale well field. The pore volumes estimated by NuFuels for restoration are based on a groundwater demonstration completed by Mobil in Section 9 (T17N, R13W) and described in Section 10.7 of the COP. NuFuels anticipates that the results of the demonstration can be used for each of the project areas because the geology and hydrogeology of the Westwater is similar at each of the project areas.

Ecological Resources

RAI-20: Baseline Ecological Resources

Please confirm that the statement from the ER that no regional or project specific ecological resources surveys have been conducted since publication of the CUP FEIS remains true and, if not, please provide copies of the survey report(s). Please also confirm whether the ecological resources mitigation measures relied upon in the ER are permit conditions, design commitments, standard operating procedures, best management practices, or general environmental commitments.

Discussion

ER Sections 3.5 and 4.5 rely on data from the 1997 CUP FEIS and 2009 ISR GEIS to describe the regional and site-specific flora and fauna. Comparing meteorological data from the CUP FEIS and 2025 ER supports the idea that climate changes have not significantly impacted ecological resources; however, NRC staff need confirmation that the impact analysis is based on descriptions that remain representative of current site conditions.

Basis

In accordance with 10 CFR 51.60(a), NRC staff must evaluate significant environmental changes during the renewal term. NUREG-1748 and NUREG-1910 identify mitigation as part of NRC's environmental review, and NUREG-1569 identifies current inventories of organisms (wild and domestic), including qualitative descriptions of abundance and maps of principal plant communities as important ISR review topics. Confirmation of representativeness is necessary to determine whether ecological impacts could be significant and whether mitigation measures remain adequate.

RAI-20 Response

NuFuels confirms that no regional or project specific ecological resources surveys have been conducted since publication of the CUP FEIS. The ecological resources mitigation measures described in Section 5.5 of the ER are mostly general environmental commitments that are common practice for the uranium ISR industry. NuFuels will adhere to commitments in the

reclamation plan and other permits that will be reviewed and approved by the BIA, BLM, EPA, NMED, and/or the NNEPA.

Public and Occupational Health

RAI-21: Quantitative Support for Potential Dose Impacts

Please identify which of the potential impact conclusions described in ER Section 4.12.1.1 are based on modeling conclusions from the CUP FEIS and which have been updated to reflect modeling conclusions from the ISR GEIS. Please include a brief explanation regarding the decision to rely on one dataset or the other.

Discussion

Introductory text under the Level 5 headings of ER Section 4.12.1.1 (e.g., 4.12.1.1.1, 4.12.1.1.2) mention that impacts will be similar to those described in the CUP FEIS and ISR GEIS, but the individual impact discussions do not tie the statements to specific sources.

Basis

In accordance with 10 CFR 51.60(a), NRC staff must evaluate significant environmental changes during the renewal term.

RAI-21 Response

Section 4.12.1.1.1 has been revised to better describe the potential impacts to the public and workers during construction.

Transportation

RAI-22: Satellite Facilities

Please clarify whether the satellite facility operations at Crownpoint will be part of the CCP facilities or separated geographically.

Discussion

ER Section 2.1.3.3 says, “The CUP will consist of three separate satellite facilities at the Crownpoint, Unit 1, and Church Rock Section 8 project areas.” However, ER Sections 3.2 and 4.2 only address transportation of loaded resin from Unit 1 and Section 8.

Basis

To determine consistency with the guidance provided in NUREG-1569 and NUREG-1748.

RAI-22 Response

Section 2.1.3 has been revised to clarify that NuFuels will operate the CCP at the Crownpoint project area and satellite facilities at the Unit 1 and Church Rock Section 8 project areas.

RAI-23: Route Description

Please confirm the directions from Church Rock Section 8 satellite facility to the CCP. The relevant text is found in the ER section and subsection identified below.

3.2.2 Material Shipment Transportation Routes

[...]

Loaded Resin Shipment

[...]

From Church Rock Section 8 satellite facility (total distance approximately 66 km [41 mi]):

[...]

- Turn right and drive east on Navajo 9 for about 2.4 km [1.5 mi]
- Turn right onto CR 47 (Crownpoint Drive) for 1.3 km [0.8 mi]
- Turn right at the CCP primary access road

However, based on ER Section 3.2.1.1, please verify whether the bullets should instead state (from NM 371):

- Turn left and drive west on Navajo 9 for about 3.2 km [2 mi]
- Turn left and drive south on CR 47 (Crownpoint Drive) for 1.3 km [0.8 mi]
- Turn right at the CCP primary access road.

[RAI-23 Response](#)

[ER Section 3.2.2 has been revised and is now consistent with ER Section 3.2.1.1.](#)

Waste Management

RAI-24: Hazardous Waste Generation

Please confirm whether the CUP ISR project would be classified under the Resource Conservation and Recovery Act as a small quantity generator or a very small quantity generator of hazardous waste. Identify whether any state or local environmental regulations require waste reduction or pollution prevention measures.

Discussion

NUREG-1748 Section 6.4.1.3 identifies the contents of a waste minimization plan as one type of information NRC staff should review when applicable. The ER does not address waste minimization plans or pollution prevention measures.

Basis

In accordance with 10 CFR 51.60(a), a supplemental environmental report for a materials license renewal must update previously submitted information to reflect any significant environmental change.

RAI-24 Response

In accordance with 40 CFR 262.16, a small quantity generator may accumulate hazardous waste on site without a permit if it is stored less than 180 days and the quantity is less than 13,200 pounds. NuFuels commits to operating below these thresholds. This is consistent with other uranium ISR facilities in the U.S.