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United States Nuclear Regulatory Commission
Attn: Ms. Andrea Kock
Deputy Director, Division of Decommissioning,
Uranium Recovery, & Waste Programs
11555 Rockville Pike
Rockville, MD 20852

Dear Ms. Kock:

By this letter, Western Uranium Corporation (WUC) hereby requests a legal advisory opinion from the United States Nuclear Regulatory Commission Staff (NRC Staff) regarding a potential license application for a research and development (R&D) license pursuant to NRC's 10 CFR Part 40 regulations and associated guidance. It is WUC's intent to obtain an R&D license of limited scope and timeframe from NRC Staff for the sole purpose of proving out its ablation technology by gathering substantive data and other information to demonstrate that it can operate on a commercial scale and produces environmentally benign mine waste. The following discussion will set forth the historical background of NRC Staff and the State of Colorado's consideration of the legal/regulatory status of ablation, subsequent legal/regulatory determinations made by both agencies, and the applicability of already-available NRC guidance to a potential R&D license application for ablation. Based on the discussion below, WUC respectfully requests that NRC Staff issue an advisory opinion concluding the following: (1) WUC may apply for and, if regulatory requirements are satisfied, receive an R&D license by submitting a license application in accordance with NRC guidance and (2) the type of R&D license that could be issued would be a source material license and not a uranium milling license under 10 CFR Part 40.

Background

In 2013, Black Range Minerals (BRM) prepared and presented an outline to NRC Staff overviewing ablation and its general concepts. In part, this outline was prepared and presented in response to correspondence between NRC Staff and the State of Colorado's Department of Public Health and the Environment (CDPHE) indicating that ablation would require, at a minimum, an AEA-based source material license. Following the presentation BRM committed to preparing and submitting a detailed legal and technical White Paper to NRC Staff for its consideration regarding whether the agency had the authority under the Atomic Energy Act of

1954, as amended (hereinafter the "AEA") to regulate ablation at mine sites as either source material processing or uranium milling or whether ablation could properly be called a "mining" activity. By 2015, the ablation operation had relocated to Colorado and BRM submitted the White Paper to the CDPHE rather than the NRC.

A year later in 2016, CDPHE submitted an inquiry to NRC Staff requesting a legal advisory opinion as to whether or not ablation required some form of AEA-based license and if a new regulatory program solely directed at ablation would be required to regulate ablation under the AEA. In response to this inquiry, NRC Staff issued a two-page unsupported legal advisory opinion in which ablation was determined to be a uranium milling activity and that appropriate 10 CFR Part 40 regulations and Appendix A Criteria are technically adequate to regulate ablation. In response to this letter and despite the public comments submitted by WUC to the contrary, CDPHE determined that ablation was indeed uranium milling and should be regulated as such under the AEA.

Research and Development Licenses at NRC

NRC guidance currently recognizes the use of R&D licenses in the materials licensing context. NUREG-1556, Volume 7 entitled *Program-Specific Guidance About Academic, Research and Development, and Other Licenses of Limited Scope* (hereinafter the "Report) sets forth the requirements for an application of this type, including those of limited scope, in a risk-informed, performance-based manner. Chapter 1 of this Report entitled *Purpose of Report* specifically identifies the use of byproduct material under 10 CFR Part 30 as the primary focus of these types of license applications. However, while this Report does not specifically mention 10 CFR Part 40 materials (e.g., source material) as part of its intended scope, the regulatory model presented in the Report can be adequately tailored to fit the needs of an R&D license of limited scope for ablation.

Indeed, even though materials such as source material are not included within this scope, source material licenses are referred to as "materials licenses" in the context of NRC regulations. As a result, the NRC-mandated requirements for 10 CFR Part 40 source material license applications are no different from those outlined in the Report for 10 CFR Part 30 license applications. For example, the Report requires that a license applicant provide adequate discussions of the type of material sought to be licensed, its handling procedures, and how the licensee would comply with appropriate 10 CFR Part 20 radiation safety regulations (Section 8). These requirements specifically identify items such as what facilities would be used under the license such as machinery and other technology (Section 8.9) and a full cradle-to-grave radiation safety program (Section 8.10), including but not limited to public and occupational dose assessments, instrumentation, surveys, and transportation. Waste and materials management is also required to be addressed (Section 8.11). These items, as well as the remainder of the Report's other requirements such as financial assurance (Section 8.5.2) and personnel (Section 8.7), are assessed in standard 10 CFR Part 40 license applications and can easily be tailored to meet the requirements of the Report.

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In this instance, it would not be the first time NRC Staff has demonstrated flexibility and risk-informed, performance-based techniques to license an AEA-activity under guidance that was not necessarily created to assess a source material license application. In the case of Water Remediation Technology (WRT), the license applicant intended to supply the use of its uranium-removal technology to community water systems (CWS) and other drinking water providers to remove uranium from said drinking water source in compliance with the then-newly promulgated uranium maximum contaminant level (MCL) under the Safe Drinking Water Act (SDWA). However, given that its concept did not take on the traditional form of a single site-specific application, but rather multiple CWS sites, WRT incorporated NRC guidance allowing for multi-site service provider license into a 10 CFR Part 40 source material license application. WRT's license application included a detailed 10 CFR Part 51 environmental report (ER) addressing all relevant National Environmental Policy Act (NEPA) requirements and all relevant technical requirements under 10 CFR Part 40. After completing its review, NRC Staff issued WRT a performance-based, multi-site license which is still in operation today and, in fact, is currently under license renewal. This example demonstrates that translation of 10 CFR Part 40 source material regulations into the context of an R&D license is possible.[1]

WUC's proposed R&D license seeks to serve a similar function by incorporating 10 CFR Part 40 requirements into the scope of guidance previously intended to address 10 CFR Part 30 requirements. As stated above, there is very little difference between the conceptual requirements of the Report for 10 CFR Part 30 licenses and those for 10 CFR Part 40 licenses, including virtually identical requirements under 10 CFR Part 20 for radiation safety. WUC's intent is to provide NRC Staff with adequate information to demonstrate that all requirements described under the Report are satisfied, as well as any other relevant data and information necessary to satisfy the regulatory mandate of 10 CFR Part 40.

In the event that NRC Staff were to determine that an R&D license can be issued within the scope of 10 CFR Part 40 regulations using the Report as guidance for such a license, WUC intends to request a license of limited time and scope for the sole purpose of demonstrating that ablation can operate on a commercial scale within the parameters previously provided to NRC Staff in its original White Paper. With respect to time for usage of the requested license, WUC intends to conduct research level ablation operations for a limited timeframe of approximately six (6) months. WUC believes that this is more than adequate time to conduct these research level ablation operations to gather sufficient data and information to provide NRC Staff or an Agreement State with a detailed specific license application for full commercial scale operations. Given that NRC Staff has specifically stated that the use of ablation processes potentially could give rise to a request for a waiver of long-term surveillance and monitoring (LTSM) requirements by using an alternate disposal option, WUC believes that authorization of an R&D

[1] Another example of NRC Staff's willingness to translate other regulatory requirements into the 10 CFR Part 40 source material realm is the repeated incorporation of 10 CFR § 50.59 performance-based criteria for site-specific changes to licensed facilities and processes within the purview of a safety and environmental review panel (SERP). While traditionally used in the nuclear power reactor context, NRC Staff deemed usage of these criteria to be consistent with the Commission's long-standing policy of risk-informed, performance-based licensing.

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license would allow the agency access to adequate information to support such a waiver, as well as to satisfy relevant 10 CFR Part 40 safety and 10 CFR Part 51 environmental regulations.

With respect to the scope of activities, WUC's planned research scale ablation operations would be strictly limited to an ore throughput of 1,000 tons with a predicted generation of approximately 250 tons of uranium-bearing ore fraction containing up to 5,000 pounds of uranium (average ore throughput grade of no greater than 0.25% U) which likely would meet NRC's definition of *licensable source material*. WUC's license application would commit to removal of all *licensable source material* from the site named in a future specific R&D license application to an AEA-licensed facility for processing and/or disposal. After a complete post-ablation characterization, WUC also would commit to the return of the resulting mine waste material to the mine from which it was removed. At the conclusion of these research scale ablation operations, WUC would then commit to either apply for license termination to NRC Staff or potentially seek to amend that license to authorize full scale commercial ablation operations in accordance with applicable NRC regulations. Consistent with 10 CFR Part 40 regulations, WUC also would establish a radiation safety program for the timeframe within which research scale operations would take place until all materials generated by such operations are properly moved to appropriate facilities for final disposition. Additionally, WUC recognizes that it cannot apply for such an R&D license without a specifically named non-Agreement State site, which it commits to name when such a site is identified. WUC also likely would seek NRC Staff input on a draft R&D license application through a pre-submission audit when and if such a license could be issued. Based on this approach, WUC believes that NRC Staff can authorize the issuance of an R&D license for research scale ablation operations.

Lastly, as a matter of regulation and even though both NRC Staff and CDPHE have determined that commercial scale ablation operations would constitute "uranium milling," WUC asserts that research scale ablation operations would not meet NRC's definition of "uranium milling." In its previous advisory opinion, NRC Staff concluded that commercial scale ablation operations would result in the extraction of source material from ores primarily for its source material content. While it does not agree with this conclusion, WUC believes that research scale ablation operations are conducted primarily to prove out the ablation technology and to gather data and information necessary to support a specific license application to NRC or an Agreement State. This argument is supported by the fact that WUC's requested license is of limited time and scope/throughput as there is no economic incentive to merely produce a limited quantity of uranium-bearing ore fraction that would be processed by another licensee. Further, by its very nature, an R&D license is not intended for commercial scale operations and is primarily designated as operations to gather data etc. Thus, WUC asserts that the appropriate type of R&D license for research scale ablation operations would be a source material license and not a uranium milling license, as the primary purpose of these operations will not be source material recovery for the source material content; but rather, research and development of the ablation technology and, therefore, the wastes from such operations cannot be classified as 11e.(2) byproduct material.

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For the reasons discussed above, WUC respectfully requests that NRC Staff provide an advisory opinion concluding that WUC can apply for and receive an R&D license for research scale ablation operations under 10 CFR Part 40 regulations and pursuant to the Report's guidance. WUC very much appreciates the opportunity to work with NRC Staff on this matter and looks forward to discussing this matter with you further. Thank you for your time and consideration in this matter and we look forward to your response.

Respectfully Submitted,

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