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United States Nuclear Regulatory Commission
Attn: Mr. Dominick Orlando, Senior Project Manager
Materials Decommissioning Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety and Safeguards
11545 Rockville Pike
Rockville, MD

Dear Mr. Orlando:

INTRODUCTION

Western Nuclear, Inc. (WNI), currently holder of United States Nuclear Regulatory Commission (NRC) License No. SUA-56 for the former Split Rock conventional uranium milling site, is in receipt of your letter dated February 2, 2016, in which NRC Staff noted that it had not yet finished review of WNI's most recent groundwater data submission dated November 18, 2015. As a result, previously scheduled public meetings to discuss this submission and subsequent discussions on such submission have not occurred, thereby further delaying the review process. While WNI understands that the review process takes time, it has now been almost ten (10) years since the final approval of WNI's groundwater model and alternate concentration limits (ACL) for the Split Rock site.¹ These approvals resulted in continuous discussions between NRC Staff and WNI about proceeding with initiation of the property transfer process and resulted in the drafting of two (2) long-term surveillance plans by the United States Department of Energy (DOE) in which all aspects of site closure, including an approved long-term surveillance boundary (LTSB), were addressed.

This letter identifies the decisions made by NRC 10 years ago with respect to the termination of NRC License No. SUA-56, addresses the apparent stumbling blocks to such license termination (namely nitrate concentrations above an invalidly-issued ACL beyond the point of compliance (POC), and questions raised by NRC Staff regarding the alleged invalidity of the approved groundwater model, which determined the current long-term surveillance boundary (LTSB), without any explicable technical basis.

¹ The 2006 timeframe also included Commission approval of requisite property acquisitions by WNI in order to ensure that all access to groundwater within the final LTSB would be restricted or strictly limited. See SRM-SECY-15-2000 (2006).

Further, this letter provides a legal justification for an administrative amendment to remove the invalid nitrate ACL from WNI's license and the legal bases for proceeding promptly to license termination as current groundwater concentrations satisfy the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) standard for final site closure and long-term surveillance and monitoring (LTSM) of two hundred (200) years and, to the maximum extent practicable, one thousand (1,000) years and, additionally, present no significant imminent hazards per Commission policy. Accordingly, WNI requests that NRC Staff address this matters promptly or WNI will be forced to take additional administrative steps to rectify the matter.

DISCUSSION

After what appeared to be progress towards license termination, starting in 2014, NRC Staff appears to have made the decision to re-open the previously approved groundwater model and ACLs without a written technical basis for doing so. It appears that this inquiry commenced due to a clause in the first draft Long-Term Surveillance Plan (LTSP) relating to an alleged exceedance of WNI's ACL for nitrate concentrations, which are not hazardous constituents under 10 CFR Part 40, Appendix A Criteria, beyond the approved point of compliance (POC). In addition, NRC Staff have apparently been incapable of independently determining whether or not current groundwater conditions invalidate the approved model long-term predictions, despite WNI's numerous submittals, meetings with staff, and good faith efforts demonstrating that they do not. Since then, this inquiry has turned into a *de facto* re-opening of the 2006 approvals regarding groundwater.

By letter dated, July 8, 2014, WNI requested that NRC Staff approve its request for approval of final license termination so that the process with DOE can move forward. Instead of providing WNI with a final determination, NRC Staff issued additional requests for additional information by letter dated January 7, 2015. In this letter, NRC stated that it did not identify any "*licensing actions wherein the NRC approved an alternate approach to site closure for WNI.*" However, NRC acknowledged in its own Technical Evaluation Report (TER) that WNI's proposed action, which consisted of establishment of ACLs *and* the use of institutional controls "*...constituted an alternative to the provisions of 10 CFR Part 40, Appendix A.*" (TER Section 1.0, 3rd paragraph). The subsequent approval of the ACLs via License Amendment 99 and 105, which are directly dependent on both the associated institutional controls and the points of exposure (represented by the LTSB), was based on the full disclosure by WNI and the full knowledge of NRC of the location of *all* 11e.(2) Byproduct Material in the groundwater including nitrate concentrations beyond the POC, and that all hazardous and non-hazardous constituents would remain protective for 1,000 years, to the extent practicable, and, in any case, at least 200 years. Given this clear evidence that WNI proposed and NRC approved an alternative approach to the requirements of 10 CFR 40 Appendix A, knew that nitrate concentrations beyond the POC were above the ACL and would remain protective for the compliance period, it is implausible that NRC asserts that the approval of the ACLs and the controls and boundaries upon which they depend is not a licensing action wherein the NRC approved an alternate approach to site closure for WNI.

The NRC January 7, 2015 letter also expressed staff concerns that recent groundwater monitoring data had shown results that are not consistent with the model's predictions. WNI's

submittals of 5/22/2015, 11/5/2105 and re-submittal on 11/17/2015 responded to these concerns by identifying that the differences between the currently measured groundwater quality and the model predicted groundwater quality are within the approved model calibration error, and therefore, do not invalidate the predicted extent of the groundwater plume for the requisite period of compliance (1,000 years, to the extent reasonably achievable, and, in any case, for at least 200 years), or the LTSB associated with the approved ACLs.

These responses in 2015 resulted in public meetings at which both WNI and NRC Staff discussed WNI's groundwater data and the viability of the approved groundwater model. After these discussions were held, WNI submitted the aforementioned 2015 groundwater submittals which WNI believes contain adequate information to support the currently approved groundwater model predictions and the associated LTSB. In discussions with NRC on 1/6/2016, WNI had contemplated re-running the approved groundwater model to produce predictions of current groundwater conditions to which current measured conditions could be compared and predictive error identified and assessed. However, after a complete search of its own, its consultants, and ADAMS electronic files, WNI has been unable to locate the final electronic input and output files developed to simulate and calibrate the groundwater flow model and solute transport models discussed in the 2003 report. Unfortunately, WNI has only able to locate electronic model files on a CD that appears to contain incomplete and pre-final groundwater model runs.

Since the start of 2016, WNI has engaged in a groundwater model reconstruction effort that was initially focused on using the electronic model files found on the aforementioned CD located in WNI's files. However, the technical team has determined that reconstructing the model from those files found on the CD is impracticable due to major discrepancies between the incomplete pre-final files and the final information in the 2003 Report. Consequently, the technical team reviewed other electronic modeling files from the original contractor's back-up computer drive that it thought might be closer to the final models. The technical team assessed if model reconstruction could be advanced using those files. However, after several more weeks of work, WNI has determined that the files from the original contractor's back-up computer drive also are quite disparate from the final model files submitted in 2003. Therefore, despite considerable efforts to re-construct the models to provide NRC with a similar and functionally equivalent groundwater modeling tool, WNI has determined that it is impracticable given the records available.

This 10 year process requires some issues resolution in order to proceed to the final stage(s) of license termination with DOE and the United States Army Corps of Engineers (USACE). Initially, with respect to the issue of the alleged exceedance of nitrate beyond the POC well, WNI asserts that NRC Staff has appropriate legal grounds to issue an administrative amendment to License No. SUA-56 removing the ACL for nitrates. Under 10 CFR Part 40, Appendix A, Criterion 5, a *hazardous* constituent requires an ACL if the licensee is unable to return site groundwater quality for said constituent to either Commission-approved background or a maximum contaminant level (MCL), *whichever is higher*. In addition, pursuant to Criterion 5B(3), a constituent "becomes a hazardous constituent subject to paragraph [Criterion] 5B(5) *only when the constituent meets all three of the following tests:*"

- (a) The constituent is reasonably expected to be in or derived from the byproduct material in the disposal area;
- (b) The constituent has been detected in the ground water in the uppermost aquifer; and
- (c) *The constituent is listed in Criterion 13 of this appendix.*"

10 CFR Part 40, Appendix A, Criterion 5 (emphasis added).

A thorough reading of Criterion 13, as referenced in Criterion 5B(3), reveals that nitrate is not listed as a hazardous constituent within the meaning of Appendix A. Further, while Criterion 13 states that, "[t]he Commission does not consider the following list imposed by 40 CFR part 192 to be exhaustive and may determine other constituents to be hazardous on a case-by-case basis..." the entirety of the Split Rock administrative record contains no evidence that nitrate was found to be a hazardous constituent under Criterion 13. Indeed, the 2006 ACL approval provides explicit evidence that NRC Staff approved ACLs for both hazardous and *non-hazardous* constituents. See *Technical Evaluation Report Alternate Concentration Limits Western Nuclear, Inc., Split Rock Site Jeffrey City, Fremont County, Wyoming Docket No.: 40-1162 License No.: SUA-56, September 11, 2006* (ML062910216)

As noted above, the 2006 ACL approval documents and other Commission SECY papers and Staff Requirements Memoranda show no determination either by NRC Staff or the Commission that nitrate in groundwater at the Split Rock site was considered to be a *hazardous* constituent. Thus, the legal grounds exist to support, and indeed suggest, that there should be a technical amendment removing the ACL for nitrate from License No. SUA-56.

In addition, even if the nitrate ACL were to be removed from WNI's license, NRC Staff will still retain the full technical and environmental review of nitrate in groundwater, and the administrative record will not be affected by such removal. The ACLs for other constituents deemed to be hazardous (e.g., uranium) and their associated technical and environmental reviews also will remain part of the record and addressed in the groundwater model prepared by WNI and approved by NRC Staff, including specifically its expert groundwater modeler John Peckinpaugh. The only measure to be taken in a license amendment would be to remove the portion of License Condition 74 dealing with nitrate.

There also should be no need for an environmental review of removal of the nitrate ACL as an administrative amendment based purely on a legal maxim (and not on potential environmental impacts) that such amendment can be classified as a categorical exclusion under 10 CFR § 51.22(c)(11) as "administrative, organizational, or procedural in nature..."² The removal of nitrate and its ACL from WNI's license would be nothing more than an administrative act to correct an aspect of the license that is patently inconsistent with existing uranium recovery regulations. Thus, NRC Staff would not be changing any aspect of its previous analyses for groundwater at the Split Rock site by removing the nitrate ACL from WNI's license. NRC Staff also will not require any additional analysis of the potential impacts of nitrate in such groundwater because, as a matter of law, nitrate should not have been the subject of an ACL during the period

² This class of categorical exclusions can be applied to WNI's NRC license, because 10 CFR § 51.60(b)(1) specifically identifies licenses for "[p]ossession and use of source material for uranium milling or production of uranium hexafluoride pursuant to part 40 of this chapter {Chapter 10}..." as candidates for application of Part 51.22(c)(11) for categorical exclusions.

of 2003-2006 when WNI's proposed ACLs and groundwater model were reviewed and approved and the Appendix A Criteria applicable to such a determination have not changed. Therefore, NRC Staff will be acting within existing regulations by issuing an administrative amendment removing the nitrate ACL from WNI's NRC license.

Next, WNI believes that comparing the most current groundwater data with the groundwater model output for the same time period will demonstrate that current measured groundwater conditions are substantially within the model calibration error and reasonable ranges of model predictive error, and, as a result, NRC Staff has no basis to question the adequacy of the LTSB, developed from the model predictions, and should proceed to license termination.

In order to accomplish a potential comparison of current measured groundwater conditions and predictive model output for the same time period, WNI requests that NRC Staff either (a) provide WNI with the original modeling files submitted to NRC Staff in 2003 upon which NRC based its approval of the groundwater model and ACLs so that a new model run can demonstrate its compatibility with the most current data, (b) perform its own analysis of the most current data using said files and/or other records available to NRC and provide either an approval for license termination or a written legal and technical explanation for why the current conditions invalidate the previously approved long-term model predictions or (3) act definitively on WNI's request for license termination.³ By re-running the previously approved groundwater model, NRC Staff (or WNI) will be able to ascertain whether the current groundwater data invalidate the approved model long-term predictions and associated LTSB.

With respect to the current review process in which NRC Staff is engaging, WNI respectfully requests that NRC Staff strongly consider using additional agency institutional memory resources to assist its review of past approved and currently requested actions, including those of previous project managers and analysts. Former NRC project managers Messrs. Randolph von Till (currently Uranium Recovery Branch Chief at NRC) and Stephen Cohen (currently working in the private sector) were heavily involved in WNI's licensing process, and NRC Staff should utilize their knowledge of the past approvals to supplement its current review, including but not limited to what occurred during this review process, what documents (internal or external to the agency) are available for review, what was evaluated, how WNI's groundwater model was submitted, how it was vetted and evaluated in concert with the licensee, and how it achieved eventual regulatory approval.

As noted above, during NRC Staff's review of WNI's groundwater model, NRC project managers utilized Mr. John Peckinpaugh, who was considered to be an expert in reviewing groundwater models.⁴ Mr. Peckinpaugh worked intimately with WNI's hydrology consultant, Mr.

³ It follows that NRC should be able to either re-run the model using the final model files or to provide WNI with such files as the Introduction to WNI's 2003 Groundwater Report states that such files were attached to the Report. See ADAMS Accession Nos. ML030760338 and ML030760346 (stating from the Introduction "*Finally, the computer files that constitute the numerical models are provided on the attached Compact Disc.*")

⁴ Indeed, Mr. Peckinpaugh's groundwater model expertise is evidenced by the Commission's June 9, 2004, directive to enlist his services during the review of groundwater and financial assurance contentions

Mike Gard, from 2003 to 2006 in order to establish a full, working groundwater model that could validate that the final, proposed LTSB would be adequate to satisfy the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) site closure criteria of 200 years and, to the maximum extent practicable, 1,000 years. This working relationship resulted in the final 2003 Groundwater Report and the supporting groundwater model that was later approved in 2006 and that has been the basis for continued negotiations with DOE over the past 10 years. Indeed, the fact that these two gentlemen, along with other WNI and NRC Staff project managers and analysts, worked very closely to ensure that the groundwater model proposed in 2003 would eventually achieve regulatory approval is buttressed by the lack of evidence of any related RAIs in the administrative record from NRC Staff. This suggests that any outstanding questions were handled through this collaborative effort and that NRC Staff ultimately was satisfied with the final groundwater model product.

While it is unfortunate that Mr. Peckinpaugh is no longer with us, WNI believes that there should be some communications and/or documentation in NRC's records which may have a strong bearing on the issues related to license termination and model performance. This makes logical sense as NRC Staff would not have issued the ACL and groundwater model approvals, if it did not have a substantial basis in law and in technical fact to do so. Thus, WNI respectfully requests that NRC Staff consider the aforementioned internal course of action and suggests that this will result in final validation of the previously approved groundwater model. WNI is aware that a public meeting will be scheduled at some point with NRC Staff to discuss its 2015 submission and the subject matter of your recent letter; however, as stated above, there has been almost 10 years between the approval of the ACLs and the supporting groundwater model and where we are today. Therefore, WNI believes it to be prudent that NRC Staff try to draw on as much institutional memory as possible so that a full and complete review can be conducted and completed as expeditiously as possible.

WNI also would like to remind NRC Staff of the Commission's determination in the *Eight Old Rec Plans* paper⁵ where the Commission found that NRC Staff should not re-visit previously approved reclamation plans unless an imminent hazard can be identified that must be addressed. Indeed, this paper specifically identifies "major deficiencies" as the criteria for reviewing previously approved reclamation plans. As of the date of this letter, the only item identified by NRC Staff over the past almost two (2) years is that nitrate levels had exceeded the approved ACL in WNI's license. However, as stated above, nitrate should not have even been considered as an ACL candidate because this constituent does not meet the requirements of Criterion 5B(3).⁶

It is likely that WNI will request a sidebar meeting at the annual National Mining Association (NMA) conference in Denver, Colorado this coming June 8, but it would be preferable

in the Hydro Resources, Inc. (HRI) administrative appeal. *See In the Matter of Hydro Resources, Inc. (Crownpoint Uranium Project), Notice of Appointment of Adjudicatory Employees* (June 9, 2004).

⁵ *See United States Nuclear Regulatory Commission, SECY-95-155, Review of Previously Approved Reclamation Plans*, (June 14, 1995).

⁶ It is also important to note that even in the face of an exceedance of the nitrate ACL, WNI believes its 2015 Report shows that all 11e.(2) byproduct material will be safely contained within the LTSB for the UMTRCA-mandated closure period of at least 200 years *and to the maximum extent practicable 1,000 years*.

if there can be some interaction with NRC Staff prior to that date based on the substance of your recent letter. WNI strongly encourages NRC Staff to consider its requests in this letter and would be happy to discuss this matter with you any time you deem appropriate. Thank you for your time and consideration in this matter and we look forward to speaking with you soon.

Respectfully Submitted,

**/Executed (electronically) by and in
accord with 10 C.F.R. § 2.304(d)/
Christopher S. Pugsley, Esq.**



Dated: May 9, 2016

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