

Staff Comments on Western Nuclear Incorporated
Split Rock Site Draft Completion Review Report

1) Page 1

On Page 1, it lists the U.S. Nuclear Regulatory Commission (NRC) as a technical reviewer.

The NRC is not a technical reviewer of the Completion Review Report (CRR) as this implies NRC participated in its development. The NRC only reviews the CRR per Nuclear Material Safety and Safeguards (NMSS) Procedure SA-900, "Termination of Uranium Mill Licenses in Agreement States."

Please remove the NRC as a technical reviewer as the CRR is a Wyoming Department of Environmental Quality (WDEQ) document.

2) Applicable Standards and Requirements Related to Topics Discussed in the CRR

In Appendix B of NMSS Procedure SA-900, Table B-1 titled Applicable Standards and Requirements Related to Topics Discussed in the CRR is provided. It lists the applicable standards and requirements and where they are addressed within the body of the CRR.

Please include a table of Applicable Standards/Requirements applicable to topics discussed in the CRR.

A table will facilitate the NRC staff review of items listed in NMSS Procedure SA-900 under Section V. Guidance, subsection (F)(2)(a)(ii), (iii), and (iv). This will facilitate the NRC staff's determination that the completed surface remedial actions, the completed site decommissioning actions, and the completed groundwater corrective actions were performed in accordance to the applicable standards and requirement.

3) Compliance with State of Wyoming criteria compatible with NRC criteria in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 40, Appendix A

Specific comparison to applicable Wyoming requirements is not discussed.

Please provide a discussion of how the site meets the requirements of Wyoming Uranium Recovery Regulations, Chapter 4, Licensing Requirements for Source and Byproduct Material consistent with the example in NMSS Procedure SA-900, Appendix B (pages B-4 to B-7).

4) Please provide a brief description of licensee's activities associated with decommissioning, tailings remediation, and groundwater cleanup, as appropriate.

The entire discussion of decommissioning is quite brief, noting that "Between 1988 and 2007 the mill and mill buildings were dismantled and the tailings were reclaimed in place. All tailings and other contaminated materials were encapsulated in the three impoundments."

Enclosure

Please provide a more detailed summary of the decommissioning of the Split Rock site, consistent with the guidance in NMSS Procedure SA-900. While the level of detail need not be exhaustive, it should be sufficient to allow a reader to understand the scope of activities conducted by the licensee. Note that, while the subsequent sections discuss the conclusions drawn by NRC and WDEQ regarding the acceptability of the licensee's actions, the decommissioning itself should also be documented in the CRR as per NMSS Procedure SA-900 under Section V. Guidance, subsection (F)(2)(a)(iii).

- 5) Documentation that the completed surface remedial actions were performed in accordance with applicable standards and requirements.

Surface Water Hydrology and Erosion Protection: Text in the WDEQ CRR appears to be inconsistent with the referenced conclusion in the NRC Construction Completion Report (CCR) review.

- a) WDEQ indicates that the NRC reviewed the contents of the CCR and concluded that the surface water hydrology and erosion protection aspects of construction were performed in accordance with the specifications identified in the reclamation plan and 10 CFR 40, Appendix A.

From the NRC CCR: Based on NRC staff observations and review of onsite records during remedial actions, as well as assessment of the verification results presented in the Completion Report, the NRC staff concludes that the required durability and gradation tests were performed during the remedial action. The riprap is of adequate quality and has been acceptably placed. The NRC staff concludes that reclamation activities at the Split Rock site have been completed in accordance with 10 CFR Part 40, Appendix A, with respect to erosion protection.

Please review the cited NRC CCR review for surface water hydrology and erosion protection and determine if the conclusions drawn by WDEQ in the CRR are consistent with those made by the NRC staff in their CCR, with appropriate supplementation with respect to WDEQ's findings. Please summarize and document in the CRR as per NMSS Procedure SA-900 under Section V. Guidance, subsection (F)(2)(a)(iv).

- b) The conclusion cites the 2000 NRC CCR review as the basis for concluding that the NRC determined that the site surface reclamation is complete. Pond reclamation occurred in 2007, and therefore WDEQ CRR should determine if the correct citation is the 2007 NRC review.

Please review the basis for concluding that the WNI site was determined in 2000 by NRC to have completed surface reclamation. Work was performed in 2007 and NRC determined then that all reclamation activities had been completed. Please summarize and document in the CRR as per NMSS Procedure SA-900 under Section V. Guidance, subsection (F)(2)(a)(iv).

- 6) Documentation that the completed site decommissioning actions were performed in accordance with applicable standards and requirements. This documentation should include a discussion of the results of radiation surveys and soil sample analyses that confirm that the licensed site meets applicable standards and requirements for release.

- a) Facilities: WDEQ relies on NRC review of the licensee's facilities decommissioning report; the text indicates that the NRC "approved the report", but the NRC report concludes that the licensee performed and documented decommissioning in accordance with license requirements.

Please review the text in the NRC staff reports and align statements in the WDEQ CRR with the NRC staff report text. While the outcome is the same in this instance since WDEQ is relying on NRC evaluations in the past rather than WDEQ performing its own independent evaluation, it would be more appropriate to quote the NRC staff findings rather than paraphrasing the NRC staff conclusions.

- b) Windblown/Soil Cleanup: The CRR states that NRC staff approved the licensee's Completion Report. As noted above, the NRC concluded "that the radiological aspects of soil cleanup were performed in accordance with WNI's approved Reclamation Plan, and that radiological cleanup and control verification data demonstrate compliance with the criteria in 10 CFR Part 40." The NRC staff determined that the Completion Report information provided reasonable assurance that the Split Rock mill site area, beyond the disposal cell (to be deeded to the Federal government), is suitable for unrestricted release.

Please review the text in the NRC staff reports and align statements in the WDEQ CRR with the NRC staff report text, as appropriate. While the outcome is the same, in this instance, since WDEQ is relying on NRC evaluations in the past rather than WDEQ performing its own independent evaluation, it would be more appropriate to quote the NRC staff findings rather than paraphrasing the NRC staff conclusions. Please summarize and document in the CRR as per NMSS Procedure SA-900 under Section V. Guidance, subsection (F)(2)(a)(ii).

- c) Tailings Cover/Radon Flux: It's not cited in the CRR where NRC approved the completion of the cover. As above, WDEQ cites an NRC conclusion regarding the radon flux by stating NRC "acceptance" of the radon flux measurements.

Please provide the documentation that the NRC concluded that the tailings cover was completed in accordance with the approved design.

Please review the text in the NRC staff reports and align statements in the WDEQ CRR with the NRC staff report text. While the outcome is the same, in this instance, since WDEQ is relying on NRC evaluations in the past rather than WDEQ performing its own independent evaluation, it would be more appropriate to quote the NRC staff findings rather than paraphrasing the NRC staff conclusions.

- 7) With regard to the State's site closure inspections, the cited inspection report does not conclude that the reclamation activities had been conducted in accordance with 10 CFR Part 40, Appendix A and notes that 2 evaporation ponds still needed to be remediated. WDEQ needs to perform their own site closure inspection before NRC can concur on the CRR. Please revise the CRR to incorporate the results of the WDEQ Site Closeout Inspection, after WDEQ completes the inspection.
- 8) Information provided as background to the groundwater remedial actions section and Appendix B of the CRR states: "Most residents of Jeffrey City derive their water supply from the town wells drilled into the Split Rock Aquifer. The Jeffrey City municipal wells

presently supply approximately 379 (Lpm) (100 gpm), though pumping only occurs periodically to fill the storage tanks. These wells are located west and upgradient of the site and therefore, unaffected by site-derived contamination.” Considering the that this statement is identical to a statement in NRC’s Environmental Assessment (EA) dated August 2006 (ML062130387), NRC is uncertain if the statement is based on more recent information obtained by WDEQ since the NRC’s 2006 EA. This updated information (e.g., current uses of groundwater in the area and the potential adverse effects on groundwater quality based on the proximity and withdrawal rates of ground-water users) is necessary for Wyoming’s evaluation and approval of the selenium alternate concentration limit (ACL) in accordance with 10 CFR Part 40, Appendix A, Criterion 5B(6).

Please include WDEQ’s basis for the above-referenced statement with a supporting reference to recent source(s) of information. If not, please update the statement in the CRR with a with WDEQ’s conclusion and basis with recent source(s) of information.

- 9) Acknowledging the CRR’s statement, “The IC’s prohibit human consumption of groundwater thereby preventing risk to human health.”, the CRR states “The DOE will confirm that no drinking water wells have been established within the Long-term Care Boundary (LTCB).” Based on these statements and other parts of the CRR, the NRC staff is uncertain whether the WDEQ confirmed that no drinking water wells have been established within the LTCB since the time NRC had regulatory oversight of WNI’s Split Rock site. As indicated in comment 8 above, accurate characterization of current uses of groundwater in the area is necessary for Wyoming’s evaluation and approval of the selenium ACL in accordance with 10 CFR Part 40, Appendix A, Criterion 5B(6).

Please update the CRR with WDEQ’s conclusion and basis that drinking water wells are not currently established within the LTCB.

- 10) Concerning the CRR’s analysis of the selenium ACL, the NRC is uncertain if WDEQ’s consideration of the list of factors in Criterion 5B(6) was exhaustive. The NRC staff agrees that “because of the long regulatory history of ACLs with this site, much of the needed analysis has been completed previously...” However, as indicated in comments 8 and 9, some of these factors require current information that NRC staff was not able find in the CRR. Please clearly identify each factor listed in Criterion 5B(6) that requires updated information since NRC’s previous ACL analyses, and provide the appropriate updated information.
- 11) Acknowledging the prior NRC evaluations, WDEQ should provide its evaluation and basis for concluding that the property rights sufficient to ensure the long-term isolation of the mill-tailings, consistent with the established LTCB, have or will be secured by the licensee for transfer to the custodial agency, as appropriate.