Department of Energy
Office of Legacy Management

SEP 1 4 2009

Richard Chang
Office of Federal and State Materials
and Environmental Management Programs
U.S. Nuclear Regulatory Commission
Mail Stop T8 F5
Washington, DC 20555-0001

Subject: Review Comments to the Draft Environmental Assessment for Revised Groundwater Protection Standards, Western Nuclear Incorporated, Split Rock Uranium Mill Tailings Site Jeffrey City, Fremont County, Wyoming

Dear Mr. Chang:

Enclosed for U.S. Nuclear Regulatory Commission (NRC) consideration are U.S. Department of Energy (DOE) comments to the Draft *Environmental Assessment for Revised Groundwater Protection Standards, Western Nuclear Incorporated, Split Rock Uranium Mill Tailings Site Jeffrey City, Fremont County* (EA). This EA, provided by letter dated August 12, 2009, was prepared by NRC in response to Western Nuclear Incorporated's (WNI) proposed amendment to Source Material License SUA–56 regarding revising ground water protection standards at the site. WNI's June 16, 2009, response to NRC's request for additional information, dated April 1, 2009, was also reviewed and considered in preparing these comments.

DOE's comments primarily pertain to the proposed alternate concentration limit for selenium and the proposed revision to the trigger value for uranium. DOE does not have any comment with regard to the remaining proposed revisions to site ground water standards.

Please call me at (720) 377-9682 if you wish to discuss any of these comments.

Sincerely,

Scott R. Surovchak

Digitally signed by Scott R. Surovchak
DN: cn=Scott R. Surovchak, c=us, o=u.
s. government, ou=department of
energy, public cas, people
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Scott R. Surovchak
Site Manager

Enclosure

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U.S. Department of Energy Review Comments
to the
Draft Environmental Assessment for Revised Groundwater Protection Standards, Western Nuclear Incorporated, Split Rock Uranium Mill Tailings Site (August 2009)

The following comments and concerns are in response to a review of the U.S. Nuclear Regulatory Commission's (NRC) draft *Environmental Assessment for Revised Groundwater Protection Standards, Western Nuclear Incorporated, Split Rock Uranium Mill Tailings Site* (EA). This EA, received by letter dated August 12, 2009, addresses Western Nuclear Incorporated's (WNI) proposed license amendments regarding the development of a alternate concentration limit [ACL] for selenium and the revision of other site groundwater protection standards for the Split Rock, WY, UMTRCA Title II disposal site. This EA was prepared following a review of WNI's response to NRC's request for additional information which was submitted in reply to WNI's draft license amendment.

The following comments and concerns are provided for consideration:

1) If NRC establishes the ACL for selenium at 0.05 mg/L and it is subsequently exceeded at the Split Rock site after the site is transferred to DOE (due to concerns described below), it is likely that DOE will propose raising the ACL based on the justification presented below rather than implementing corrective action. However, if NRC would like to consider a higher ACL for selenium at this time, DOE would be happy to share our analysis on this issue with you.

2) It is not entirely clear that selenium concentrations in the NW Valley floodplain aquifer have stabilized and are likely to remain below the proposed ACL of 0.05 mg/L. Concentrations in well WN-42A reported a maximum concentration of 0.042 mg/L in October 2007, following what appeared to be an upward trend (prior results; 0.041 mg/L in Sept06, 0.037 mg/L in Sept05, and 0.017 mg/L in Jan97). Subsequent to this maximum concentration, a clear and defensible downward trend does not appear to have been established in this well (subsequent results; 0.028 mg/L in Apr08, 0.036 mg/L in Sept09, and 0.030 mg/L in May09). Well WN-42A is the next downgradient well from the point of compliance (POC) for the NW Valley floodplain aquifer; Well–5.

3) In addition, a spike in selenium occurred in Well-4R in 1995, with three results in that year reported above the proposed ACL of 0.05 mg/L. Concentrations in this well reached a maximum of 0.34 mg/L in May 1995. Well-4R is located directly upgradient of POC Well-5. If, as it has been suggested, these elevated concentrations represent a "pulse" of contamination moving downgradient through the groundwater system, there is a chance that the concentrations reported in Well–4R (upgradient of the POC) could result in an exceedance of the ACL under long-term monitoring.

4) In January 2009, during the quarterly conference call, NRC indicated the same concern mentioned in Comment 2 regarding the concentrations in well WN-42 and said they

wanted to see more data before making their decision; this was understood to mean that data through the Sept09 sampling event would be considered. In that regard, the draft EA accepting WNI's proposal to use the MCL of 0.05 mg/L as the ACL seems premature.

5) Without a clearly established downward trend (subsequent to what appeared to be an increasing trend), there isn't much headroom between the recent selenium concentrations in well WN-42A (range; 0.028 - 0.042 mg/L) and the proposed ACL (0.05 mg/L).

6) 10 CFR 40 (Appendix A, Criterion 5D) indicates that if a groundwater protection standard is exceeded at a licensed site, a corrective action program must be put into place within 18 months. As described in Comments 2 and 3 above, there is a chance that the proposed ACL could be exceeded in a downgradient well and potentially trigger corrective action. DOE does not believe that exceeding the 0.05 mg/L ACL for selenium in itself, as described above, is justification for corrective action. A higher ACL would be protective and can be justified based on the methodology used to establish ACLs for other site constituents.

7) The other ACLs for the site were established by using the maximum observed historic concentration in either of wells WN-4/4R or WN-5 (including data as far back as 1983). If that approach were to have been used for selenium, the ACL could be established as the maximum historical value for well WN-4R (0.34 mg/L reported in May 1995), or, to meet ALARA, by using the average value for 1995 of 0.138 mg/L. This approach would then leave sufficient headroom between the recent results in non-POC well WN-42A and the ACL.

8) Protectiveness of the previously established ACLs was demonstrated by evaluating the potential effects of discharge of contaminated water to the Sweetwater River. The ACL application showed that discharge of groundwater at the concentration of the ACLs would meet aquatic standards after factoring in dilution effects of the river, though calculated values would not meet drinking water standards. (Note: As indicated in the draft EA, the Sweetwater River is classified by the State of Wyoming as Class 2AB. Class 2AB surface water is a classification of water that is presumed to have sufficient quality and quantity to support drinking water supplies, unless shown otherwise, and is therefore, protected for that use.) It appears that trigger levels were established at drinking water standards or risk-based levels in order to be protective of this potential water use. Trigger levels apply to wells nearest the potential points of exposure (i.e., the Sweetwater River for the NW Valley floodplain aquifer and groundwater in the regional Split Rock Aquifer to the south beyond the long-term care boundary, as groundwater use restrictions are in place for this aquifer within the long-term care boundary). If a similar approach were applied to selenium, the aquatic standard (0.005 mg/L) would be more limiting that the drinking water standard (0.05 mg/L) and would provide a more appropriate basis for establishing a trigger level in the floodplain aquifer.

9) The draft EA refers to the uranium trigger values as "corrective action limits" and mentions corrective action in association with trigger values in several locations within the document. This is somewhat concerning, as there does not appear to be a regulatory

basis for establishing trigger values (which are intended to be applicable only at the POE, or site boundary) and it is not clear what the required actions would be if they were exceeded; based on the language used in the draft EA, corrective action would appear to be a possibility. DOE has no objection to using trigger values as guidelines for evaluating groundwater quality trends, but does not believe that they should be enforceable or that exceedences should be cause for correction action. DOE only intends to include them in the long-term surveillance plan (LTSP) as a "trigger" for implementing an evaluative monitoring program to determine if there is any cause for concern; NRC will be notified if a trigger value is exceeded, and will be provided the plan for implementing the evaluative monitoring program.

10) The proposed revised uranium trigger value for the NW Valley floodplain aquifer is 0.044 mg/L. The May 2009 uranium concentration reported in well WN-39B was 0.498 mg/L. Well WN-39B is located ~1500' upgradient of well WN-41B (which is the closest well to the river) and ~3000' upgradient of the Sweetwater River. This latest uranium concentration reported in well WN-39B appears to be part of a recent increasing trend in that well. Well WN-41B (the well to which the trigger value would likely be applicable) reported uranium at 0.009 mg/L, well below the proposed trigger value of 0.044 mg/L. However, due the current concentrations reported in well WN-39B (and the apparent increasing trend), there is some concern that this elevated concentration could represent another "pulse" of contamination moving downgradient and the trigger value for uranium could be exceeded in well WN-41B under long-term monitoring. As noted above, if this occurs, DOE would evaluate the situation, but would not take any immediate corrective action.

Summary

1) Based on past monitoring results, DOE has concerns about NRC's proposed ACL for selenium of 0.05 mg/L. Concentrations close to this value have been observed in the last several years and it is not inconceivable that this level could be exceeded in the future.

2) DOE believes that an ACL for selenium could be established at a higher concentration that would still be protective and would be consistent with the methodology used to develop ACLs for other site constituents.

3) If the selenium ACL is set at 0.05 mg/L and DOE accepts the site into its LM program, DOE does not believe that an exceedence of the selenium ACL alone would be grounds for requiring corrective action. An alternate approach would likely be proposed.

4) DOE does not believe that the "trigger levels" established for locations near the POE should have regulatory significance. DOE has no objection to using trigger levels for evaluating monitoring results, but does not believe that an exceedence of a trigger level for any constituent should be immediate cause for requiring corrective action.