July 11, 2011

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SUBJECT: COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE DISPOSAL OF GREATER-THAN-CLASS C (GTCC) LOW-LEVEL RADIOACTIVE WASTE AND GTCC-LIKE WASTE

On February 25, 2011, the U.S. Department of Energy (DOE) published a notice in the *Federal Register* (76 FR 10574) announcing the availability of the "Draft Environmental Impact Statement (DEIS) for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste and GTCC-Like Waste" for public review and comment. As a commenting agency, the U.S. Nuclear Regulatory Commission (NRC) offers the enclosed remarks for consideration by DOE. At a later date, the NRC will also submit its perspective on the four topics identified in the February 16, 2011 letter from Ms. Christine Gelles to Mr. Larry W. Camper.

In the interim, NRC staff will remain available to answer any questions related to the Commission's regulations, guidance, and other regulatory concerns. The NRC appreciates the opportunity to provide comments on the DEIS. Should you have any questions, please contact Janelle Jessie, my staff representative, at (301) 415-6775.

Sincerely,

/RA/

Andrew Persinko, Deputy Director
Environmental Protection
and Performance Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

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U.S. Nuclear Regulatory Commission—General Comments on the Draft Environmental Impact Statement for the Disposal of Greater Than Class C (GTCC) Low Level Radioactive Waste and GTCC-Like Waste

The U.S. Nuclear Regulatory Commission (NRC) is cognizant of its potential role as the licensing authority for the U.S. Department of Energy's (DOE) greater-than-class C (GTCC) low-level radioactive waste (LLW) disposal facility. For this reason, the NRC has elected to participate as a commenting agency for DOE's Draft Environmental Impact Statement (DEIS) for the disposal of GTCC and GTCC-like LLW. Recognizing this role, the NRC identified several general issues as well as a number of section-specific issues in the DEIS. Some comments relate to the adequacy of technical information which NRC may need to make a licensing decision while others address the need for additional information or further clarification. Most of these comments are offered as examples and this document should not be considered an exhaustive list of information needed to support a license application and its review.

NRC Non-Section-Specific Comments

1) The document contains a large number of assumptions for which no basis is provided. This compromises the rigor of the impact analyses. Going forward, a thorough basis should be provided for all assumptions and conclusions.

2) The GTCC DEIS discusses disposal of both GTCC waste generated by NRC licensees and "GTCC-like" waste generated by DOE. Section 3(b)(2) of the Low Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPAA) requires that all Section (3)(b)(1)(D) waste that results from NRC licensed activities be disposed of in a facility licensed by the NRC. This section does not grant NRC the authority to license and regulate disposal of DOE generated or owned GTCC-like waste. If DOE decides to operate a facility that disposes of both DOE and commercially generated waste, NRC would license the portion of the facility that handles commercially generated waste. However, the specific issues associated with licensing a combined facility will depend on the preferred alternative selected by DOE.

3) DOE should consider including an evaluation of the most likely combination of the alternatives, as well as their impacts, in the Final Environmental Impact Statement documenting selection of an alternative.

4) A discussion of impacts from "Intentional Destructive Acts" should be included for all of the alternatives. If this discussion is not added, DOE should explain why this discussion is not necessary for the alternatives where the discussion is omitted.

5) In the DEIS, accidents are discussed for each of the proposed alternatives with the exception of the "No Action" Alternative. A discussion of accidents for the "No Action" Alternative should be included or a justification for why it's not needed should be provided.

6) A detailed description and evaluation of the potential environmental impacts should be presented for each affected resource.

7) A brief discussion of mitigation for the long-term impacts of the "No Action" Alternative should be provided.

8) A discussion of both: (1) impacts of an alternative on climate change; and (2) impacts of climate change on an alternative should be provided for all of the alternatives, including the "No Action" Alternative. Additionally, this evaluation should use the same parameters for each alternative. If the same parameters are not used, a basis for that decision should be provided.

9) For each alternative, a brief description of transportation routes and modes for conveying construction materials to the facility should be included.

NRC Section-Specific Comments

1) **DOE DEIS:**
Section 1.4.2.3.1, Page 1-23: "*Wastes would be contained in packages designed to retain their integrity for an extended time period, and these wastes would be carefully emplaced into the trenches."*

Section 5.1.4.3, Page 5-18: "*For wastes like activated metals and sealed sources, which mostly contain radionuclides with shorter half-lives, this EIS does not assume grouting would be required because of the waste form.*"

NRC Comment:
Waste container and packaging are an important part of disposal, but little information is presented. Table 5.1-3 on pages 5-3 to 5-4 lists the container type, but additional information should be included in the assessments of the alternatives including composition of the container materials, container thickness, and the potential physical and chemical processes that could affect contaminant release. Since the release rate at the source term is usually a significant component of any assessment, specific information should be included on the contents of the containers, in addition to the waste. "Other Waste" will be embedded in mortar, but it is not clear that the activated metals and sealed sources will be embedded in a sandy backfill or mortar, or if waste will be the only material within the containers.

2) **DOE DEIS:**
Section 1.4.2.3.2, Page 1-23: The above-grade vault design is "…*similar to a belowground vault option for LLRW disposal (Denson et al. 1987) that was previously investigated by the U.S. Army Corps of Engineers (USACE). A similar concrete vault structure is currently in use for the below-grade disposal of higher-activity LLRW at SRS (MMES et al. 1994)...*"

NRC Comment:
A brief rationale should be given for excluding the below-ground vault design.

3) **DOE DEIS:**
Section 1.5.2, Page 1-44: "*Data on the GTCC LLRW that might be generated by the concentration and consolidation of Class B and Class C LLRW are difficult to ascertain at this time because of the speculative nature of these events. The uncertainty that would be introduced in the EIS process by including this potential volume is not warranted."*

NRC Comment:
It would be helpful to include additional details supporting the determination that a discussion of the concentration of Class B and C LLRW is not warranted.

4) **DOE DEIS:**
Section 1.8, Pg 1-48 (Tribal Consultation): In the DEIS, only 14 American Indian tribal governments for four of the sites being analyzed were consulted.

NRC Comment:
Consultations with American Indian tribal governments were limited in that they were not conducted for SRS, WIPP vicinity, or the other generic regional locations. Justification should be provided in the DEIS as to why consultations were only conducted for the four sites: Hanford, INL, LANL, and NNSS.

5) **DOE DEIS:**
Section 2.0, Page 2-2: "*The impact analysis for the decommissioning phase has not been included in this EIS but would be conducted at a later time, as appropriate*."

NRC Comment:
A comparison of decommissioning impacts would be useful in selecting an alternative. For example, an additional 4,300 m^3 (150,000 ft^3) of GTCC LLRW and GTCC-like wastes could be generated by the exhumation of the Nuclear Decommissioning Authority and State-Licensed Disposal Area at the site as part of future decommissioning activities. Exhumation would be an action within the scope of Alternatives 2, 3, 4, and 5, and as such, should be part of the assessment and included in the impact discussions for these alternatives. This would apply to all "Other Waste" that requires exhumation and transportation to a potential GTCC facility. The "No Action" Alternative would not require such an assessment.

6) **DOE DEIS:**
Section 2.6, Page 2-9: *"[T]he NOI for the GTCC EIS also identified the Oak Ridge Reservation (ORR) as a site to be evaluated for potential disposal of GTCC waste by using a land disposal method because of its ongoing waste disposal mission. However, disposal of radioactive waste at the ORR is currently limited to only CERCLA wastes. Through further reviews conducted by the Low-Level Waste Disposal Facility Federal Review Group, DOE determined that the site is not appropriate for disposal of LLRW containing high concentrations of long-lived radionuclides (such as those found in GTCC waste), especially those with high mobility in the subsurface environment. For this reason, DOE concluded that the Oak Ridge Reservation is not a reasonable disposal site alternative and has eliminated it from detailed evaluation in this EIS."*

NRC Comment: The FEIS should state specifically what technical basis makes the ORR site inappropriate for disposal of GTCC waste, especially for those wastes with highly mobile isotopes in the subsurface environment.

7) **DOE DEIS:**
Section 2.7.4.2, Page 2-17: "*The key input parameters that influenced the long-term human health results are the precipitation rates and the soil distribution coefficients (K_ds) assumed in the calculations*."

NRC Comment:
The K_ds should be included as a parameter in the sensitivity analyses.

8) **DOE DEIS**
Section 2.7.12, Page 2-23: "*DOE did not evaluate the cumulative impacts of the no action alternative, since such an evaluation would involve making speculative assumptions about environmental conditions and future activities at the many locations where the GTCC LLRW and GTCC-like waste could be stored."*

NRC Comment:
Because of its generic nature, the DEIS contains numerous assumptions that could be described as speculative but the DEIS came to conclusions on impacts for alternatives other than the no-action alternative. Therefore, it is unclear why, the DEIS could not also make reasonable (non-speculative) assumptions on future environmental conditions and activities in order to evaluate the no-action alternative.

9) **DOE DEIS:**
Section 2.8.4, Page 2-58: "*Because the soil distribution coefficients are used to calculate the radionuclide release rates for sealed sources, it is assumed that the radionuclides would be released to the surrounding soil immediately upon contact with water. This approach is assumed to be conservative, and it adds a large uncertainty to the results presented in this EIS*."

NRC Comment:
A conceptual model of contaminant fate and transport should be presented for each alternative. Assumptions could then be compared to the conceptual model, and large uncertainties would not need to be added to the results. For example, reduced water infiltration rate for only the waste disposal area is assumed to be conservative within the DEIS because with a higher water infiltration rate outside the waste disposal area, the transport time needed for radionuclides to reach the underlying groundwater table after they have been released from the waste disposal area would be shortened. However, a conceptual model may point out that the engineered cover casts a large water shadow so that the higher water infiltration rate outside of the waste disposal area flows past the area of concern and is not significant.

10) **DOE DEIS:**

Section 2.9.2, Page 2-61: "*Use of boreholes or a geologic repository might require more waste handling to make the physical size of the waste manageable than use of trenches or vaults. The need for treatment could result in greater worker doses.*"

DOE DEIS, Appendix B, Page B-7, Table B-3, Footnote d: "*Because of the assumed volume reduction, the volumes presented in this GTCC EIS are less than those presented in the Final EIS for the West Valley Site (DOE 2010a).*"

NRC Comment:

This is an incomplete evaluation of worker dose. Waste handling by workers for the borehole and geologic repository alternative should be evaluated or at least discussed in the worker impact sections. If there is additional volume reduction as stated on page B-7 that involves worker handling, the process of this reduction should be described and discussed, and the impact to workers included in the assessment.

11) **DOE DEIS:**

Section 2.9.3, Page 2-64: "*If post-closure care is not maintained, vaults could pose a greater potential for radiological exposures to the public (Rao et al. 1992; Kozak et al. 1993). Consequently, maintenance of institutional controls is considered particularly important for this technology to achieve post-closure safety. Long term post-closure care requirements for the trench, borehole, and deep geologic methods should be less than those for an above-grade vault (USACE Waterways Experiment Station 1984).*"

NRC Comment:

10 CFR 61.59 states that a NRC licensed disposal facility may not rely upon institutional controls for longer than 100 years. The level of information presented regarding this design option does not appear to support this alternative under the regulation. To support any future decision, DOE needs to provide additional information that supports the satisfactory behavior of above-ground vaults beyond the institutional control period. In addition, availability of suitable borrow areas needed to build above-grade vaults was not addressed.

12) **DOE DEIS:**

Section 3.5.1.2, Page 3-20: "*For the long-term evaluation of the No Action Alternative in this EIS, the following assumptions apply: (1) maintenance activities at these storage facilities would not be conducted after the active institutional control period (i.e., after 100 years), (2) the storage containers would start to degrade to the extent that potential radionuclide releases could occur, (3) these radionuclides would then reach the groundwater and move down gradient off-site, and (4) a hypothetical individual would use and consume this contaminated groundwater in the future. These assumptions were made to allow for an assessment of the potential human health impacts in the future; they do not imply that such a situation is reasonable or likely to occur.*"

Section 5.2.4.2 Alternatives 3, 4, and 5 (pg. 5-26): "*The human health impacts associated with the waste handling, transportation, and disposal of GTCC LLRW and GTCC-like wastes are analyzed for all aspects associated with managing these wastes, from the point of generation, to the transportation of wastes to the disposal site, to the placement of wastes in the disposal facility, and to the long-term management of the closed facility. That is, this evaluation includes an assessment of potential environmental impacts for both the operational phase and post-closure phase of actions at the disposal sites."*

Section 5.2.4.3 Alternatives 3, 4, and 5 (pg. 5-26): "*Following completion of the useful life of the disposal facility, it would be decommissioned in accordance with applicable requirements at the time. A long-term monitoring and maintenance period would follow site decommissioning to ensure that the disposal facility was adequately containing the disposed wastes.*"

NRC Comment:
In determining the long-term impacts of the "No Action" Alternative, the DEIS assumes that there are no institutional controls. It is not clear that the same assumption is used for the other alternatives. Please clarify whether no institutional controls for long term impacts are assumed for all of the alternatives and if they are not, please provide a justification.

13) **DOE DEIS:**
Section 3.5, Page 3-10: "*Under the No Action Alternative, it is assumed that the current facility operations at the storage and generator sites would continue for the short term and result in minimal impacts on most resource areas (e.g., air quality, geology, water resources, ecological resources, socioeconomics, land use, transportation, and cultural resources)."*

NRC Comment:
A basis for the assumption that the "No Action" Alternative would have minimal impacts on the stated resource areas should be provided. Specific information regarding these impacts should be available since these facilities are currently operating.

14) **DOE DEIS:**
Section 3.5, Page 3-11: "*For purposes of analysis of the long-term impacts, wastes from the GTCC inventory that are assumed to be generated within a given NRC region are assumed to be stored at a single facility in that region, and this storage facility is assumed to have a footprint of 300 x 300 m (1,000 x 1,000 ft). It is recognized that these simplifying assumptions do not represent the current situation, and GTCC wastes are currently stored throughout the region at a number of locations. However, this approach is assumed to be reasonable for estimating the potential radiation doses and LCF risks to address the long-term impacts associated with the No Action Alternative*."

NRC Comment:
A basis for the estimated footprint should be provided. Also, additional details are necessary to demonstrate why this "single site" assumption is reasonable.

15) **DOE DEIS:**
Section 4.3.4.3, Page 4-60: "*The post-closure impacts of disposing of the GTCC LLRW and GTCC-like wastes were evaluated in the EIS in the same manner as was done for TRU wastes (i.e., by developing complementary cumulative distribution functions (CCDFs) based on performance assessments) (Sandia 2008c,d; 2010a). The post-closure impacts are limited to the potential radiation doses from the release of radionuclides from waste packages at WIPP and from their subsequent migration to groundwater*."

NRC Comment:
The analyses performed by Sandia Laboratories for Alternative 2 (disposal at WIPP, page 4-61) should be integrated into the FEIS. The uncertainty produced by using a different computer code and possibly a different analysis methodology should also be discussed (i.e. page E-30).

16) **DOE DEIS:**
Section 5.2, Pages 5-18 to 5-19: "*The generic commercial disposal locations are not evaluated for the environmental resource areas discussed in this section because each of the four regions encompasses a very large area for which a meaningful evaluation of the resource area is not possible. However, human health impacts for the long term are estimated by using region-specific input parameters. This estimate was done in order to provide information that could be used to distinguish the four regions from one another.*"

NRC Comment:
The assessments for the generic commercial regional (I–IV) sites and the "No Action" Alternative are too generic to support an informed decision on an approach for disposing of GTCC wastes. Comparison of results with other sites using site-specific data is unrealistic. For instance, an effective site evaluation would require important parameters such as the depth to groundwater and the unsaturated zone thickness. However, in the DEIS these depths were averaged over areas too large to be of any real value. Results are very dependent on characteristics of the specific sites. The resulting impact analyses are therefore too generic to allow for a useful comparison.

17) **DOE DEIS:**
Section 5.3.1.2, Page 5-47: "*In addition, this Section 5.3.1.2 provides a qualitative assessment of the potential effects of global climate change on the proposed land disposal (borehole, trench, and vault) facilities for the long term, as discussed below*."

NRC Comment:
Climate change could affect the results included in the assessments. Currently, the prognoses of future climate states and changes are uncertain. It is precarious to rely on one document (Karl et al. 2009) to characterize future climate conditions in different regions of the United States. A more comprehensive assessment should include

sensitivity analyses with varying climate-sensitive parameters (e.g., infiltration rates, erosion rates, water table fluctuations, etc).

18) **DOE DEIS:**
Section 5.5, Page 5-93: "*The inadvertent human intruder scenario is not evaluated quantitatively for Alternatives 3 to 5 because the NRC had already incorporated the inadvertent human intruder protection concept in its classification system of LLW as Class A, B, C, or GTCC. The NRC had already determined that for waste classified as GTCC, conventional near-surface land disposal is generally not protective of an inadvertent human intruder.*"

NRC Comment:
10 CFR 61.42 states that the disposal facility must ensure the protection of inadvertent intruders. A quantitative evaluation as part of the licensing process would normally be required to demonstrate that this performance objective is being met and should be included in the FEIS.

19) **DOE DEIS:**
Chapters 6-11: Most of the federal sites considered in the DEIS are relatively large areas or regions. Because site factors can vary significantly, potential environmental impacts can also vary significantly.

NRC Comment:
Both the precision of the reference location being described as well as the site-characteristics need to be improved.

In addition, the NRC has the following specific concerns about the "reference sites" associated with the alternatives selected by DOE for analysis in the DEIS:

i. *Nevada National Security Site*: The reference location is near a dry lake bed. 10 CFR 61.50(a)(5) states that, "The disposal site must be generally well drained and free of areas of flooding or frequent ponding." If the precipitation rate increases in the future, this area might experience more flooding.

ii. *Idaho National Laboratory:* The reference location appears to lie within the Big Lost River Flood Plain. 10 CFR 61.50(a)(5) states that, "Waste disposal shall not take place in a 100-year flood plain, coastal high-hazard area or wetland".

iii. *Hanford Site:* The reference location appears to be an area where the Ringold Formation is absent, yet the parameter values cited in Table E-5 on pages E-36 through E-39 included the Ringold formation.

iv. *Savannah River Site*: The reference location description is inconsistent throughout Chapter 10. The reference location shown in Fig. 10.1-1 and Fig. 10.1.2-2 is positioned to the northeast of the locations shown in the figures presented later in the chapter.

20) **DOE DEIS:**
Section 4.3.1.2.1 (Page 4-52): In the DEIS, it was assumed that "only the two noisiest pieces of equipment would operate simultaneously in order to estimate noise levels."

NRC Comment:
The noise impacts analysis methodology presented are not complete. The referenced assumption is not presented as a part of the noise impacts analysis methodology described in Appendix C. Throughout Appendix C, the methodologies presented should be complete for each resource area including methodologies for analyzing noise impacts.

21) **DOE DEIS:**
Section E.1, Page E-3: DOE selected RESRAD-OFFSITE for use in this DEIS because of its ability to address radioactive decay and in growth of progeny radionuclide(s).

NRC Comment:
In the DEIS, it was not demonstrated that this is a significant process affecting the results. The potential disadvantages of RESRAD-OFFSITE include: no source term discretization for different designs and no container failure-release rate simulation. Diffusion, colloidal transport (corrosion products), and chemical forms were not modeled. The advantages and disadvantages of RESRAD-OFFSITE and other suitable codes should be addressed in the FEIS. Subsequently, the rationale for choosing a particular numerical code should be documented.

22) **DOE DEIS:**
Section E.2.2, Page E-10: "*For purposes of analysis in this EIS, it is assumed that the engineered barriers would begin to degrade and fail 500 years after the closure of the disposal facility. This assumption is considered to be conservative (i.e., yield greater impacts) since the integrity of the engineered barriers is expected to last longer than 500 years. Many of the radionuclides in the GTCC LLRW and GTCC-like wastes have very long half-lives, so this 500-year time period would not result in an appreciable reduction in the total hazard associated with these wastes as a result of radioactive decay*."

NRC Comment:
No infiltration for 500 years is a very significant technical assumption and is non-conservative. The infiltration rate is one of the most important parameter inputs and affects the impact analyses in a significant way. Although the expectations are that the engineered barrier will last for a very long time, an effective performance rate of 100 percent over a 500 year period has not yet been demonstrated. Relatively little information is provided on the covers to be used for the borehole and trench alternatives, and how they are expected to maintain their high rate of performance over the long-term. In addition, many of the radionuclides in the GTCC wastes have shorter half-lives so that a complete immobilization of 500 years could make a difference. Because the numerical simulation runs used to support the DEIS are deterministic, this assumption should be well-documented and include a sound technical basis.

23) **DOE DEIS:**

Section E.2.2, Page E-11: "*It is assumed that the water infiltration rate into the top of waste disposal facility would be zero for the first 500 years following closure, and then it would be 20% of the natural rate. This approach is meant to account for the reduction in the integrity of the cover and other engineering barriers as they begin to degrade and fail. This value was used for all future times extending to 10,000 years and longer (to obtain peak annual doses).*"

NRC Comment:

Excluding 80 percent of the assumed infiltration from 500 years until 10,000 years after closure is a very significant and non-conservative assumption. Although the expectations are that the engineered barrier will last for a very long time, an effective performance rate of 80 percent over a 9500 year period has not yet been demonstrated. The infiltration rate is one of the most important parameter inputs and affects the impact analyses in a significant way. Because the numerical simulation runs used to support the DEIS are deterministic this assumption should be well-documented and include a sound technical basis.

24) **DOE DEIS:**

Section E.2.3, Page E-11: "*The radionuclide release fraction for activated metals was taken to be 1.19 x 10^{-5}/yr in this analysis. This value is assumed to be reasonable for stainless-steel waste forms for the purpose of this comparative analysis on the basis of rates observed in corrosion experiments on stainless-steel coupons conducted at INL (INL 2006; Adler Flitton et al. 2004). However, if the environmental conditions surrounding a specific waste were not controlled and were more conducive to causing corrosion, or if the metal making up a specific waste was more conducive to corrosion, the release fractions could be higher than those used here*."

NRC Comment:

Important input values, such as waste form release fractions, should be supported by a strong technical basis and included as performance measures in the sensitivity analyses.

25) **DOE DEIS:**

Section E.2.3, Page E-12: "*The solidification provided by mixing the Other Waste with a stabilizing agent would also reduce the leaching of radionuclides. However, the reduction in leaching might not last over a long period of time, when the nature of the stabilizing agent would change in the environment or the integrity of the stabilizing agent would deteriorate. In this analysis, the effectiveness of solidification in terms of leaching reduction is assumed to last for 500 years following facility closure; after that, the retention of radionuclides by the stabilizing agent is assumed to be the same as that of the surrounding backfill soils.*"

Section E.2.3, Page E-13: "*Note that these values are based on specific assumptions regarding the type of cement used and would need to be reconsidered on the basis of the actual cements that could be used in a specific situation. Maintaining local reducing conditions can be an important consideration in designing the final system for specific wastes containing significant amounts of nickel, technetium, and uranium isotopes*."

NRC Comment:
The DEIS's assumption of 500 year effectiveness of "Other Waste" solidification in terms of leaching is a very significant and non-conservative assumption. Although the expectations are that the cementitious material will remain with minimum cracks and virtually intact for a very long time, an effective performance rate of 100 percent over a 500 year period has not yet been demonstrated. Considering that the numerical simulation runs are deterministic this assumption should have a well-documented and sound technical basis.

26) **DOE DEIS:**
Section E.6, Page E-20: Three variables were used to perform sensitivity analysis: increased infiltration rates after 500 years, longer periods of grout effectiveness, and greater distances to the receptor. No analyses were performed on infiltration occurring before 500 years on grout degrading before 500 years. The distance to the receptor is set by regulation and not an ideal parameter to use for sensitivity analyses. Although the draft EIS states that precipitation rates and soil distribution coefficients (K_ds) are key input parameters, K_ds are not included in the sensitivity analyses.

NRC Comment:
The draft EIS does not demonstrate what the most significant parameters are nor does it provide insights on how contaminants move through the man-made and natural systems. Furthermore, sensitivity analyses should provide insight into how the disposal system works in concert with the environment and should identify those input parameters that are the major contributors to the variation or uncertainty in the calculated dose.

27) **DOE DEIS:**
Appendix E, Tables on RESRAD-OFFSITE input parameter values, Page E-30: "*Chose a small value [erosion rate] so that the buried waste would remain covered within the time frame considered (i.e., would yield more conservative groundwater results because there would be no losses through surface runoff and erosion)."(page E-43)*

NRC Comment:
This low erosion rate assumption lacks a technical basis and assumes that the engineered cover remains intact for a longer period of time. This assumption also excludes the possibility of waste being exposed at the surface by geomorphic processes.

28) **DOE DEIS:**
Appendix E, Table E-18: The evaluation of the WIPP vicinity site appears to use less conservative parameters than other site locations.

NRC Comment:
i. Similar distribution coefficients are used for all sites except WIPP vicinity site (see Table E-14). For example, while most sites have a zero K_d value for Iodine, the WIPP vicinity has 1; while most sites have a zero K_d value for Technetium, the WIPP vicinity has 0.1.

ii. Additional inconsistency exists in the unsaturated zone thickness. Page 4-29, lines 30-32, state that, “The saturated zone, which makes up the middle portion of the Dewey Lake, occurs at depths of about 50 to 80 m (164 to 262 ft),” while RESRAD-OFFSITE input value uses a depth of 153 m (Table E-13, page E-56).

iii. Section 11.4 on page 11-35 incorrectly applies concluding results of the 2005 NRC Lea County EIS to the cumulative impacts for the WIPP Vicinity site. The Lea County site was much further away and did not consider impacts from the WIPP site.