

August 5, 2011

Ms. Christine Gelles, Director
Office of Disposal Operations
Department of Energy
1000 Independence Ave, SW
Washington, DC 20585

SUBJECT: RESPONSE TO THE DEPARTMENT OF ENERGY'S REQUEST FOR THE U.S. NUCLEAR REGULATORY COMMISSION'S PERSPECTIVE ON FOUR SPECIFIC TOPICS IN THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE DISPOSAL OF GREATER-THAN-CLASS C (GTCC) LOW-LEVEL RADIOACTIVE WASTE AND GTCC-LIKE WASTE

On February 16, 2011, you submitted a letter to the U.S. Nuclear Regulatory Commission (NRC) acknowledging NRC's role as a commenting agency (see Staff Requirements Memorandum – SECY 05-0104, dated June 30, 2005) on the Draft Environmental Impact Statement for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste (LLRW) and GTCC-Like Waste. Additionally, you invited NRC to share its comments on the following topics: 1) Applicable Federal Laws and Regulations, 2) Conceptual Disposal Facility Designs, 3) Factors to Consider in Developing a Preferred Alternative, and 4) Impact Assessment Methodologies.

While no conclusions regarding regulatory changes have been made, the NRC staff provides these comments in the hope that they will assist DOE in identifying a preferred alternative and creating a final EIS.

NRC staff will continue to monitor the selection of a proposed alternative for the disposal of GTCC LLRW and GTCC-Like Waste, and will remain available to address questions about the licensing process, NRC regulations, guidance, and other regulatory concerns.

Should you have any questions, concerning this response please contact Janelle Jessie at (301) 415-6775.

Sincerely,

/RA/

Larry W. Camper, Director
Division of Waste Management
and Environmental Policy
Office of Federal and State Materials
and Environmental Management Programs

Enclosure:
Gelles Letter Response

Should you have any questions, concerning this response please contact Janelle Jessie at (301) 415-6775.

Sincerely,

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Larry W. Camper, Director
 Division of Waste Management
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 Office of Federal and State Materials
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Enclosure:
 Gelles Letter Response

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OFC	DWMEP	DWMEP	DWMEP	DWMEP	DWME P	NMSS	DWMEP	OGC	DWMEP
NAME	JJessie	AWalker- Smith	CMcKenney	MLee for GSuber	KHsueh	AMohseni	DPersinko	With edits	LCamper
DATE	7/01/11	7/06 /11	7/07/11	7/14 /11	7/15/11	7/27/11	7/29/11	7/19/11	8/5/11

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Gelles Letter Response

Topic #1 (Applicable Federal Laws and Regulations): We invite the U.S. Nuclear Regulatory Commission (NRC) to comment on whether the NRC would need to develop new regulations or technical standards in the event that U.S. Department of Energy (DOE) decides to implement any of the alternatives evaluated in the Draft Environmental Impact Statement (EIS). In addition, we invite the NRC to comment on how ongoing or planned NRC initiatives might impact the disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste (LLW), such as efforts to risk inform 10 CFR Part 61 and to promulgate guidance related to spent fuel reprocessing.

All four of the proposed alternatives in the DEIS would require the development of new technical standards. If DOE selects a land disposal alternative (aboveground vaults, trenches, or intermediate boreholes), then NRC will have to develop technical standards meeting the Part 61 Subpart C performance objectives. On the other hand, if DOE selects the deep geologic alternative, NRC will have to update the technical standards in Part 60, which would then be implemented either through rulemaking or through a specific licensing order. Both the substantive content of the technical standards as well as the process for developing and implementing those standards will depend on the preferred alternative selected by DOE. Accordingly, it is important that DOE notify NRC of the preferred alternative as soon as possible so that NRC can chart a course towards developing and implementing the appropriate technical standards.

Furthermore, as noted in the July 11, 2011 general comments to DOE on the DEIS (letter from Persinko to Edelman), the GTCC DEIS discusses disposal of both GTCC waste generated by the NRC licensees and "GTCC-like" waste generated by DOE. Section 3(b)(2) of LLRWPA requires that all Section (3)(b)(1)(D) defined waste that results from the NRC licensed activities be disposed of in a facility licensed by the NRC. This section does not grant the NRC the authority to license and regulate disposal of DOE-generated or owned waste streams that are GTCC-like. If DOE decides to operate a facility that disposes of both DOE GTCC-like waste and commercially-generated GTCC, NRC would license the portion of the facility that handles commercially-generated GTCC. However, the specific issues associated with licensing a combined facility will depend on the facility design specifications of the preferred alternative selected by DOE.

When considering any ongoing or planned initiatives that may impact the disposal of GTCC, the staff identified the current rulemaking efforts associated with Part 61, which may require licensees to perform a site-specific performance assessment. A proposed rule has not been published, so speculation regarding potential impacts on GTCC types and quantities is premature. However, the proposed rule is expected to include a provision concerning the blending of LLRW. The staff is also evaluating blended waste in an update to its Branch

Technical Position on Concentration Averaging. In the October 13, 2010 SRM (10-0043), the Commission directed the staff to "...not include waste at Greater-Than-Class C (GTCC) concentrations in the scope of this Site-Specific Analysis rulemaking" The Commission further noted that GTCC is a Federal responsibility and should not become a State responsibility even if the waste has been blended into a lower classification.

It is also important to note that the responsibility for GTCC and "GTCC-Like" waste continues to be defined by the LLRWPA, which refers to the Part 61 classifications as they were in 1983. In Staff Requirements Memorandum (SRM) 08-0147, the Commission directed the staff to risk-inform the existing Part 61 waste classification framework. However, this activity is not scheduled to begin until at least Fiscal Year 2013. Absent any statutory changes to the LLRWPA, staff believes that neither of these initiatives will impact the type and quantity of GTCC arising from the NRC and Agreement State licensed activities for which DOE has disposal responsibility.

Topic #2 (Conceptual Disposal Facility Designs): We invite the NRC to comment on the conceptual designs for the alternative land disposal methods (intermediate depth borehole, enhanced near surface trench, and above grade vault), including whether there are additional design features that DOE should consider for inclusion in the Final EIS. Once a preferred alternative is selected, DOE plans to refine the designs depending on the location and method selected for implementation.

In its general comments to DOE on the GTCC DEIS (letter from Persinko to Edelman, dated July 11, 2011), the staff identified several instances in the DEIS where clarification is needed to further explain the use of conceptual designs presented for each of the proposed land alternative disposal methods. Throughout the DEIS, DOE mentions that "...a combination of the alternatives proposed may be appropriate" In 54 FR 22579, dated May 25, 1989, the Commission noted that it would develop technical criteria to implement performance objectives and environmental standards *after* DOE had selected specific disposal technology. Consistent with the Commission's earlier position, the staff suggests that DOE consider providing an analysis of possible combinations that could be chosen. Selecting a combination of the alternatives could complicate any rulemaking or licensing proceeding related to the construction of a GTCC disposal facility. Further, if DOE has a specific reason for excluding an analysis of a combination of proposed alternatives, then the DEIS should include the rationale for that exclusion.

DOE provides little information on waste containers and packaging, which are important features of any LLRW disposal system. The DEIS does not have enough information in the assessments of the alternatives on the composition of the container materials, their thickness, and the effects that a contaminant release could have on the physical and chemical properties of the materials.

Given the limited technical information regarding disposal design concepts being considered by DOE, the NRC staff has no additional comments at this time regarding any particular design alternative. But to determine ultimate licensibility, significantly more technical information would be required in conjunction with the identification of a preferred alternative in the Final EIS and a license application Safety Analysis Report.

Topic #3 (Factors to Consider in Developing a Preferred Alternative): DOE does not have a preferred alternative for the disposal of GTCC waste and, therefore, has not identified such an alternative in the Draft EIS. The Draft EIS identifies factors that we will consider in developing a preferred alternative or alternatives for the Final EIS. We invite the NRC to comment on the appropriateness of the factors and whether there are other factors that DOE should consider.

Presently, the GTCC DEIS addresses a range of factors that will be used to determine a preferred disposal alternative. In addition to the factors presently considered, the staff proposes a few additional factors for consideration.

While reviewing the GTCC DEIS, the staff noted that potential environmental impacts were not presented for each alternative. DOE should consider providing a detailed description of these impacts for each alternative, including the "No Action" alternative, and DOE should use the same parameters to highlight the basis for selecting one alternative over another. If the same parameters are not used, a reason should be provided. Similarly, the staff noted that the inadvertent intruder scenario for land disposal was excluded from the evaluation; DOE should explain why this factor was not considered. The NRC will need to consider factors such as inadvertent intruders as part of any licensing action.

A brief description of transportation routes and modes for conveying construction materials to the facility should also be included in the GTCC DEIS for each alternative considered. If a brief description is not included in the DEIS, DOE should explain why this factor is not addressed.

Topic #4 (Impact Assessment Methodologies and Evaluation of Long-Term Human Health Impacts for the No Action Alternative and the Land Disposal Alternatives): We invite the NRC to comment on the methodologies, assumptions, and uncertainties used in the impact analyses.

After reviewing the GTCC DEIS and assessing the methodologies, assumptions and uncertainties used in the impact analyses, the staff concluded that the document contains a large number of assumptions for which no basis is provided. For example, the DEIS includes an assumption that the No-Action Alternative would result in minimal impacts on most resource areas for the short term but provides no basis for the assumption (See section-specific comment number thirteen in the letter from Persinko to Edelman, dated July 11, 2011). Sound technical bases for these assumptions would enhance the validity and usefulness of the impact analyses.

Additional suggestions for topic four can be found in the staff's general comments to DOE on the DEIS (letter from Persinko to Edelman, dated July 11, 2011).

Finally, NEPA requires a systematic, interdisciplinary, and integrated use of the sciences in a decision making process. The environmental impacts of the proposed alternatives are the core sections of an environmental impact statement. The alternatives should be rigorously explored and objectively evaluated to allow the decision makers to evaluate the comparative merits of the alternatives. As an example, the EIS should include a comparative analysis of both the impacts of an alternative on climate change and the impacts of climate change on an alternative for each of the disposal alternatives (see non-section specific comment number eight in the letter from Persinko to Edelman, dated July 11, 2011). Although the level of detail of analysis within an EIS does not need to be that of a performance assessment or safety case document, the impact assessment methodologies must be similar for each of the EIS alternatives, and the assessments for each of the alternatives must be consistent, thorough, and complete for the reviewer to be given a clear basis for choice among the options.