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Very Low-Level Radioactive Waste Scoping Study

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Very Low-Level Radioactive Waste Scoping Study

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General Comment

To Whom It May Concern:

My name is Jeremy King. I have a bachelor's degree in Mechanical Engineering from The University of Texas at Austin, and I'm currently a doctoral student in Nuclear Engineering at Texas A&M University. I have a vested interest in the continued success of all facets of the nuclear industry in the United States and reasonable up-to-date regulations are key to that success. Below are my comments on the questioned posed by the NRC on the issue of Very Low-Level Waste storage.

1 - I encourage the NRC to adopt a formal regulatory definition of Very Low-Level Waste similar to that of the IAEA's. The NRC should consider how best to adapt this definition to current NRC safety and safeguards regulations, which are generally more conservative than those of the IAEA.

2 - Yes, I encourage the NRC to amend its waste categorization framework under 10 CFR 61.55 to create a category for Very Low-Level Waste. In defining criteria for this new category, the NRC should consider allowable limits for the following physical quantities: radioactivity per mass and/or volume of material, heat generation per mass and/or volume of material, lifetime radioactivity of the material (i.e. how long must the material be stored until it is equally active as naturally occurring radioactive material), and chemical reactivity with the storage material over all lifetime transmutations. By analyzing these properties, the NRC will be able to establish new regulations for this class of material which are less costly and have a smaller footprint on the environment.

3 - I am not familiar with the regulation in question and am not qualified to comment on this aspect of the policy.

4 - I am not familiar with the regulation in question and am not qualified to comment on this aspect of the policy.

5 - Yes, I posit that any and all interstate compacts which may handle the disposal of Low-Level Waste are qualified and authorized to dispose of Very Low-Level Waste. The NRC regulation should clearly declare that Very Low-Level Waste is a lesser hazard than Low-Level Waste which was previously being insufficiently disposed of in the same manner as Low-Level Waste.

6 - I am not familiar with the regulation in question and am not qualified to comment on this aspect of the policy.

7 - If the new categorization of Very Low-Level Waste is carefully defined as a lesser hazard than Low-Level Waste using the same scientific methods used to define the higher-level waste categories, I do not foresee any unintended consequences.

8 - I do not have experience modeling long-term waste storage and am not qualified to comment on this aspect of the policy, but I encourage the NRC to reach out to qualified scientists at national laboratories and universities for the best answers to this question.

9 - The NRC should analyze not just the scientific reason behind defining a Very Low-Level Waste category but also the economic and environmental benefits. Disposing of Very Low-Level Waste in the same manner as Low-Level Waste unnecessarily increases the costs of waste disposal as well as the environmental impact by increasing the material, energy, and land consumed by disposal efforts. Economic factors to consider include but are not limited to changes in transportation costs, manufacturing costs of waste containments, regulatory costs of a lower waste category, real estate costs for storage grounds, and personnel costs for safety and security staff.

The above comments are given in good faith as a private citizen and stakeholder in the issue at hand. Thank you for your time, and please feel free to reach out to me or the many knowledgeable faculty members in the Texas A&M University Nuclear Engineering Department for further comments.

Best regards,
Jeremy King