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Docket: NRC-2017-0081
Greater-Than-Class-C and Transuranic Waste

Comment On: NRC-2017-0081-0001
Disposal of Greater-than-Class C and Transuranic Waste; Public Meeting

Document: NRC-2017-0081-DRAFT-0001
Comment on FR Doc # 2018-03085

Submitter Information

Name: Allison Neff
Address:
709 S 20th Street
Apartment 3
Philadelphia, PA, 19146
Email: neff.allison@gmail.com

General Comment

See attached file(s)

Attachments

Comment by Allison Neff

From: Allison Neff, JD Candidate 2020, Widener University Delaware Law
To: Secretary, U.S. Nuclear Regulatory Commission
Attn: Rulemakings and Adjudications Staff
Washington, DC 20555-0001

March 1, 2018

Re: **Docket No.** NRC-2017-0081: **Agency:** United States Nuclear Regulatory Commission (NRC): **Action:** Seeking participation and involvement in identifying various technical issues that should be considered in developing regulation to dispose of Greater-Than-Class-C and Transuranic Waste through means other than a deep geological disposal, including near surface disposal. 10 C.F.R. § 61 (2017).

The Greater-Than-Class-C (GTCC) and transuranic waste that is identified and classified as low-level radioactive waste (LLRW), RIN § 3150-AI92; Docket ID NRC-2011-0012, contains a concentration of radionuclides that exceed the limits established by the Nuclear Regulatory Commission for Class C LLRW, according to 10 C.F.R. § 61.2 (2017). Accordingly, not all waste is suitable for near-surface disposal. The NRC is seeking participation and involvement in identifying possible technical issues that should be considered in developing regulation to dispose of GTCC and transuranic waste through means other than near-surface disposal.

It is my opinion that the most responsible resolution of GTCC and transuranic waste disposal is to reprocess the waste. Reprocessing separates nuclear waste into component materials, including plutonium, which can be reused as nuclear reactor fuel. The characteristics of the waste will vary from each waste cycle. Therefore as a conservative approach to maximize environmentally safe disposal, all of the waste should be treated as high-level waste as defined by the Low-Level Radioactive Waste Policy Act and the 10 C.F.R. § 61.55 (2017) waste classification system. If used reactor fuel is not reprocessed, it will continue to contain all of the

highly radioactive isotopes. However, since it largely consists of uranium (with a little plutonium), it represents a potentially valuable resource and there is an increasing reluctance to dispose of it permanently. For final disposal, and to ensure that no significant environmental releases occur over tens of thousands of years, 'multiple barrier' geological disposal is the current standard of disposal. This technique will immobilize the radioactive elements in high level waste and isolate them from the biosphere. Eventually, as a long term solution to the storage of high-level radioactive waste, a permanent repository should be a priority for the N.R.C. in order to advance the efforts of this proposed regulation.

A main concern presented by the N.R.C. in this request for comment is ensuring the safety and security of a disposal facility during operations. The presence of high activity radionuclides in GTCC may impact the design and operational activities at a disposal facility. Therefore, I suggest that the operational facility have the exact safety precautions and procedures identified in the Nuclear Waste Policy Act of 1982 and, more clearly defined, in 10 C.F.R. § 34 Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations. Panoramic irradiators that have dry or wet storage of the radioactive sealed sources are the current storage method for high-level waste, and which I am proposing as the means to dispose of GTCC waste. If GTCC waste is treated as LRWW the facility will run the risk of unsafe precautions and contaminations that would be present. In order to ensure stabilization of the GTCC, all waste should be treated as high-level waste. Methods such as sea or extraterrestrial disposal should be analyzed as plausible alternatives to high-level waste facilities. Mitigated measures, such as utilization and expansion of current high-level waste facilities, should be considered as a primary source of disposal.

In conclusion, GTCC and transuranic waste is a priority concern to scientists and the public alike. Ensuring safety and environmentally responsible disposal of nuclear waste is a long term process that needs to be addressed now through various techniques, that are conservative in nature. The process of potentially amending the NRC's regulations is very thoughtful and deliberative because it can have significant impacts on members of the public, States, licensees, and other stakeholders. The regulatory basis describes the various scientific, technical, and legal issues associated with a potential rulemaking. When this initial phase is completed, staff plans to develop a regulatory basis which will be provided for public review. Additionally, staff plans to hold public meetings on the draft regulatory basis. Ultimately, the staff will develop a final regulatory basis.

Sincerely,

A handwritten signature in black ink, appearing to read 'Allison Neff', with a stylized flourish at the end.

Allison Neff
JD Candidate 2020
Widener University Delaware Law