FORMAL COMMENT

DATE: June 10, 2015

TO: Catherine Haney
Director
Office of Nuclear Material Safety and Safeguards
United States Nuclear Regulatory Commission
Washington, DC 20555-0001

FROM: American Nuclear Society University of Utah Student Chapter

SUBJECT: Low-Level Radioactive Waste Disposal
Docket ID NRC–2015–0003 and NRC-2011-0012

Introduction

One hundred years ago when Rutherford first discovered the nucleus, who knew that would send the world into the golden age of nuclear science? A golden age that, until Chernobyl in 1986, had given humanity unrivaled gifts and power. Since then, we have struggled to overcome many obstacles and have finally reached what my colleagues and I believe to be a second golden age for nuclear. As a student chapter full of young nuclear engineers we know that it is our duty to involve ourselves in the future of our industry, a future that is dependent on the rulemaking and policy of today. After our generation is long gone, this waste will remain and it is up to us to make sure it is secure with the right regulations. Today, we have read the rule changes and are here to provide feedback.

Feedback

Analyses timeframes

Depleted Uranium (DU) will be the primary source of radiation for this Low Level Radioactive Waste (LLRW) storage facility. DU has a lower activity than natural uranium. Natural uranium has been present on this planet since its existence and has never impeded the progress of civilization in its presence. The background radiation dosage of the average American amounts to 300 mrem/yr, well above the required dosage of the 1,000 year Compliance Period. This annual dosage for Americans is still much lower than many international regions which can exceed 700-900 mrem/yr. Even during the 1,000-10,000 Protective Assurance Period, society would not experience adverse health effects from the 500 mrem/yr dosage.

Nuclear technology has only existed for 6-7 decades and the advancement of said technology has been extraordinary. Safety in that industry has grown in parallel with technology and has surpassed the safety standards of other industries, thanks to organizations such as the Department of Energy and the NRC. This trend in safety, including the storage in the Clive facility, will only increase the capabilities of protection and safety.

Performance assessment (PA)

Using information from the surrounding area and facility, with accurate and benchmarked models the capabilities of the site can be determined with reasonable accuracy. Limitations of time are reasonable within the analysis timeframes. Using continuous assessment of the facilities, similar to this ongoing assessment, and ongoing increases in technological ability allow organizations and licensees to ensure the safety of the public and surrounding habitation.

Intruder assessment (IA)

Site intrusion scenarios are not solely based on material definition, but the site characteristics and expected activities. We support the enhancing of intruder assessment to be site specific and not based on the classification of stored materials. These assessments not only allow the protection of the general public, but allow planning for future catastrophes and even minor intrusions.

Protective assurance period analyses

Following a dosage optimization plan, as opposed to a dosage limit, allows the ongoing elimination of health risk. Keeping the dosage at a continuing minimum also decreases necessary effort in controlling this risk. Extending assessment and setting a target dosage limit that is well under producing any adverse health effects allows for this optimization to operate productively.

Performance period analyses

The analyses to assess site features beyond 10,000 years ensure limiting long term impact. Class A waste, as the least radioactive form of LLRW, is a useful trigger for these measures and the fractional concentration technique is well established and reputable.

Safety case / Defense-in-depth (DID)

Safety case and defense in depth, as defined, will provide long term protection and security for the general public and site for the necessary timeframe. Requirement of these measures is necessary and will provide the licensee be responsible for the site after closure.

Waste acceptance criteria (WAC)

Following proper waste characterization and certification and using site specific analyses to determine acceptable waste for a land waste storage facility will provide necessary protection for the site.

Conclusion

Providing the necessary safety and protection to ongoing generations is of the utmost importance for this industry to thrive. As young members of this industry, we need it to thrive. After reviewing these changes and policies we believe they will be a part of protecting this industry's future and help usher it into the new golden age of nuclear.

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