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Innovative Approaches for Data Collection and Analysis of Surface and Subsurface Residual Radioactivity to Support License Termination

Comment On: NRC-2023-0067-0001

Modern Approaches for Radiological Measurement, Data Collection, and Data Analysis of Surface and Subsurface Residual Radioactivity To Support NRC License Termination

Document: NRC-2023-0067-DRAFT-0008

Comment on FR Doc # 2023-09513

Submitter Information

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General Comment

Attached are the comments of the National Mining Association regarding the Nuclear Regulatory Commission's request for information on "Modern Approaches for Radiological Measurement, Data Collection, and Data Analysis of Surface and Subsurface Residual Radioactivity to Support NRC License Termination"

Attachments

NMA Comments on NRC Proposed Modern Approaches for Radiological Measurement



KATIE SWEENEY

Executive Vice President & Chief Operating Officer

June 5, 2023

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Mail Stop: TWFN-7-A60M
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Washington, DC 20555-0001
ATTN: Program Management, Announcements and Editing Staff

Submitted electronically via the www.regulations.gov

Re: Modern Approaches for Radiological Measurement, Data Collection, and Data Analysis of Surface and Subsurface Residual Radioactivity to Support NRC License Termination

Dear Sir/Madam:

The National Mining Association (NMA) appreciates the opportunity to submit comments regarding the U.S. Nuclear Regulatory Commission's (NRC) request for information to inform its understanding of the current state-of-art in approaches to radiological survey (i.e., radiation instrumentation and data collection) to support decommissioning and license termination. 88 Fed. Reg. 28618 (May 4, 2023). NMA's members include current conventional and/or in situ leach uranium recovery (ISR) licensees, as well as potential future conventional and/or ISR license applicants that have significant expertise in radiological measurements. Several of these companies have operated or intend to operate in Wyoming and the NMA strongly endorses the comments of the Wyoming Mining Association (WMA).

The NMA is the official voice of U.S. mining. Our membership includes more than 275 companies and organizations involved in every aspect of mining, from producers and equipment manufacturers to service providers. We represent all facets of the domestic mining industry and the hundreds of thousands of American workers it employs before Congress, federal agencies, the courts, and the public. The NMA advocates for public policies

that will help America fully and responsibly utilize its vast natural resources. Our members work to ensure America has secure and reliable supply chains, abundant and affordable energy, and the American-sourced materials necessary for U.S. manufacturing, national security, and economic security, all delivered under world-leading environmental, safety, and labor standards.

The intention of the NMA comments is not to duplicate the WMA comments but to reinforce that association's answer to NRC question 5: "What areas do you see as challenges or gaps to radiological survey design and data analysis that could be addressed in future guidance (e.g., a priori scan minimum detectable concentrations calculation) or tool development (e.g., data integration and post-processing)? In response, WMA discussed the problems in determining background and the ability to distinguish between naturally occurring and anthropogenic radionuclides in soils. The distinction is vitally important as NRC licenses are required to remediate contamination to prescribed limits but are not required to remediate naturally occurring background radionuclides.

As NRC has recognized however, under certain circumstances distinguishing between the two can be difficult, if not impossible. For example, NRC's NUREG-1501, *Background as a Residual Radioactivity Criterion for Decommissioning* issued in 1994, recognized that:

In areas where background is both high and widely variable, the ability to assess facility-related radionuclides becomes increasingly difficult. Even with the application of state-of-the-art measurement techniques and the collection of large amounts of radiological data, radiological dose limits for some radionuclides cannot be measured with sufficient certainty using current survey techniques.

This document was an Appendix to the *Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for Decommissioning of NRC-Licensed Nuclear Facilities*. While the document is dated, its conclusion is not. It specifically recognized that in some circumstances, e.g., those involving residual contamination from naturally occurring radioactive materials, the ability to "measure" very low levels of residual contamination relative to the natural background of these radionuclides, which can be several times higher, is not technically feasible and calculational methods must be used. As the WMA comments further explain, this difficulty can be exacerbated at uranium recovery sites due to the following conditions:

- Uranium recovery operations are primarily sited on or near uranium deposits meaning that area soils naturally possess elevated background activities of uranium and its decay products;
- Legacy uranium recovery sites often lack robust soil background for natural uranium and its decay products for surface soils and often no data whatsoever for subsurface soils;
- Background concentrations of uranium decay chain radionuclides can be highly variable both laterally and vertically with extremely elevated background concentrations present in very small soil volumes.

Any future NRC guidance needs to acknowledge the uncertainties related to determining background and distinguishing between naturally occurring and anthropogenic radionuclides in soil. Again, as stated above, the NMA endorses the entirety of the WMA comments, including its answers to other NRC questions. The NMA appreciates the opportunity to provide these comments. If you have any questions regarding these comments, please contact me at ksweeney@nma.org or (202)463-2627.

Sincerely,

A handwritten signature in cursive script that reads "Katie Sweeney". The ink is dark and the signature is fluid and legible.

Katie Sweeney