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**SUBJECT:** Industry Comments on the Draft Standard Review Plan for Decommissioning - Appendix C, "Technical Basis for Dose Modeling Evaluation."

The Nuclear Energy Institute (NEI) appreciates the opportunity to provide the following comments on behalf of the nuclear energy industry. NRC's performance-based license termination rule provides licensees with both opportunities and challenges. Clear, flexible regulatory guidance is needed to reduce those challenges. Appendix C contains this needed flexibility and provides a useful contextual framework for evaluating dose-modeling techniques as they are applied to the decommissioning of nuclear facilities.

Industry's overall comments are positive and the staff is commended for drafting a comprehensive technical basis for dose modeling while maintaining an aggressive schedule for finalizing the Standard Review Plan (SRP). In addition, we are pleased that the SRP is to be a living document such that new insights from the practical application of the license termination rule can be incorporated on a periodic basis. The comments we provide today will be supplemented in the future as our members apply the guidance to real world dose modeling scenarios.

From a policy perspective, we must continue to urge the NRC to reduce the conservatism that is layered throughout the guidance associated with compliance with the license termination rule. The final rule states that the unrestricted dose criterion of 25 mrem/y "appears reasonable from the standpoint of providing an ample margin of safety..." which "...reflects the Commission's judgement that the likelihood of individuals being exposed to multiple sources with cumulative doses approaching 100 mrem/y is quite small."

Given this view by the Commission, the conservatism built into the dose modeling guidance to assure the dose constraint is met should be commensurate with the risk or consequences of exceeding the dose constraint. Exceeding this constraint by even

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100% would still leave a significant margin of safety. Public health and safety would be maintained.

Given these minimal consequences, it is not reasonable for a licensee to spend tens of millions of dollars to prove they are well below the criteria. Relatively simple demonstration of compliance, easily understood by the public, is in the best interest of all stakeholders.

The staff's approach, providing screening criteria for simple sites and allowing the use of site specific dose modeling for complex sites, is appropriate in concept. However, its usefulness is diminished in two important ways:

- The screening criteria are far too conservative to be useful by many licensees including reactors.
- The burden of implementing the site-specific dose modeling will far outweigh any enhanced public health and safety protection provided, except for the case of sites with highly complex radiological conditions such as contaminated surface and/or groundwater.

These issues have been discussed in numerous NRC Workshops and documented in several sets of industry comments on NRC guidance documents. In many cases, including the draft Appendix C, the staff acknowledges the excess conservatism in the codes that generated the screening criteria. The NRC has taken action to address this problem in part. However, we believe that now is the time to stop, step back, view the implementation guidance for the license termination rule in total, and ask the following questions:

- Will it reduce unnecessary burden?
- Will enhance public confidence?
- If not, how can the guidance be modified to accomplish these goals while being fully protective of public health and safety?

Specific comments on Appendix C are provided in the attachment. If you have questions concerning the enclosed comments, please contact me at (202) 739-8109 or Paul Genoa at (202) 739-8034.

Sincerely,



Lynnette Hendricks

PHG/amj

# NRC Appendix C

## Specific Industry Comments

1. Specific guidance is needed for sites with existing groundwater contamination. Neither DandD or RESRAD can calculate dose/DCGLs for this case directly. Guidance is needed as to which alternative codes might be acceptable, or how DandD/RESRAD can be used to determine dose/DCGLs indirectly. Inclusion of an example application would be useful.
2. Guidance should be included for dealing with multiple sources of residual radioactivity (e.g., soil and debris). Should dose/DCGLs from multiple sources be determined as part of dose modeling, or should dose/DCGLs be determined operationally by combining doses from individual sources using the unity rule? Again, an example application might be helpful.
3. Most commercial nuclear power plants are located on coastlines or adjacent to rivers or other water bodies where a potential exists for residual radioactivity to accumulate in sediments. As neither DandD or RESRAD considers the associated pathways, guidance for determining sediment DCGLs is needed.
4. Relative to source term abstraction, page C.17, Section 3.1, first bullet, last sentence states "All radionuclides potentially present at the site should be included...".

The NRC should provide guidance on how to deal with trace isotopes. NRC should only require nuclides that contribute to significant dose at that site to be included. Currently, it would seem that all isotopes must be included and neither DandD nor RESRAD contain "All radionuclides potentially present at the site...". In addition, the soil and building screening tables should contain the same isotopes.

5. Page C.19, Section 3.3, #2 states "Assess the dose associated with actual concentrations of residual radioactivity distributed across the site....".

It is our understanding that in accordance with MARSSIM, a site would be judged on a survey unit basis. These survey units are to be selected in a way that is consistent with exposure pathway modeling and will be the primary entity for demonstrating compliance with the release criterion. In other words, "a priori" DCGLs are established, and each survey unit is tested to see if it is below 25 mrem/y. The exposure scenarios used in the dose modeling for each of these survey units are conservative and mutually exclusive. It is inappropriate to require the summation of exposures from various survey units. An average member of the critical group can not be in more than one place at the same time. Does this statement now require a final site-wide test, even after each individual survey unit passes?