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Subject: Comments on Part 63

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Tim,

I offer the following comments regarding the use of the term "reasonable assurance" in the Proposed Part 63.

The Proposed Part 63 makes it clear that compliance is to be based on calculations of "expected annual dose" (Fed. Reg. of 2/22/99, page 8644). This requirement is completely consistent with the recommendation in the National Research Council report on "Technical Basis for Yucca Mountain Standards," which recommends "that the mean values of calculations be the basis for comparison with our recommended standards." (NAS report, page 123).

Elsewhere, Part 63 includes the term "reasonable assurance," for example, on page 8644 where the proposed rule states "... the Commission seeks to establish a constraint that, if met, would provide reasonable assurance that doses to members of the general public will remain below acceptable levels."

One might reasonably infer that the interpretation of "reasonable assurance" that makes these two sections of the proposed rule consistent is that "reasonable assurance" is equivalent to the use of mean or expected values. However, I did not find an explicit statement to this effect in the proposed rule. The "definitions" section of the proposed rule (Part 63.2) does not include an entry for "reasonable assurance."

I have two concerns regarding the use of the term "reasonable assurance" to define the degree of confidence needed to achieve compliance. First, it is my impression that, in many other contexts, the NRC has used "reasonable assurance" to mean a degree of confidence that is more stringent than the expected value. For those in the NRC and other interested parties, e.g., nuclear power plant operators, who interpret "reasonable assurance" to be a stringent requirement, use of this term to describe a mean or expected value may be confusing because it is inconsistent with its historical meaning. Second, the NRC is required to implement the generally applicable regulations of the EPA. In various EPA standards for high-level radioactive wastes (e.g., Part 191 and the standards applicable at WIPP), EPA has used the term "reasonable expectation" to describe the required degree of proof of compliance. My impression, based on my involvement with various radioactive waste management activities, is that the majority of people in the HLW field view "reasonable assurance" as being more stringent than "reasonable expectation." It is likely that by requiring "reasonable assurance" in Part 63, the NRC will be seen as implementing the EPA standards in a way that is not consistent with EPA's intent. If it is NRC's position that the two terms are synonymous in the context of HLW disposal, then this should be made more explicit.

If the NRC agrees that the historical meaning of and precedents for defining "reasonable assurance" means something more stringent than the mean or expected value, then use of this term to mean the expected value is confusing and should be avoided. Alternatively, a less significant change would be to include the term in the definitions section of Part 63. If this is

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done, it can be made clear that, in the context of Yucca Mountain, "reasonable assurance" refers to the mean or expected value of the relevant probability distribution. Either way, the potential confusion regarding the degree of proof associated with Part 63 requirements can be avoided.

These comments do not necessarily reflect the views of any organization with which I am affiliate; I make them as an individual member of the public.

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