

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary
FROM: COMMISSIONER DIAZ
SUBJECT: SECY-99-272 - AGREEMENT STATE COMPATIBILITY FOR
CRITICALITY REQUIREMENTS APPLICABLE TO LOW-
LEVEL WASTE DISPOSAL FACILITIES

Approved _____ Disapproved XX *[Signature]* Abstain _____

Not Participating _____

COMMENTS: See attached comments. *[Signature]*

--REC'D BY NJD--

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[Signature]

SIGNATURE

Dec 14, '99

DATE

Entered on "AS" Yes No _____

COMMISSIONER DIAZ'S COMMENTS ON SECY-99-272 "AGREEMENT STATE COMPATIBILITY FOR CRITICALITY REQUIREMENTS APPLICABLE TO LOW-LEVEL WASTE DISPOSAL FACILITIES"

I disapprove the staff's proposal to revise the compatibility of 10 CFR 61.16(b)(2) from category *NRC* to category *Health and Safety* and disapprove finalizing the draft guidance document on the grounds that such actions are unnecessary for adequate protection of public health and safety. Instead, the staff should retain the current compatibility requirement for 10 CFR 61.16(b)(2). In addition, the staff should terminate all analysis of accidental criticality resulting from waste emplacement for disposal at waste sites regulated by Agreement States since these sites are only authorized to possess above ground enriched uranium not exceeding 350 grams, uranium-233 not exceeding 200 grams, and plutonium not exceeding 200 grams.

The staff has not identified realistic scenarios that could occur at waste sites regulated by Agreement States and that could result in accidental criticalities as a result of emplacement of waste. Considering the above ground possession limits for the sites, the licensing requirements in 10 CFR Part 61 (other than § 61.16(b)(2)), the transportation packaging requirements in 10 CFR Part 71, and the assumptions made as part of the analysis, the likelihood of occurrence of the scenarios identified is extremely low. Further, even if such scenarios were to occur, the probability of a resulting criticality accident is extremely unlikely.

Neither has the staff identified realistic health and safety concerns that could result from accidental criticalities as a result of emplacement of waste at sites regulated by Agreement States. The staff simply states that a nuclear criticality accident could result in radiation doses, an undeniable but insufficient statement. In reality, it is the sustained criticality or supercriticality having a substantial number of total fission events and a high fissioning rate that is the potential public health and safety concern. Yet, the staff fails to make a compelling case that this is a probable occurrence. Fission, after all, is a natural everyday occurrence whenever there are fissile materials and is not restricted to criticality events. The staff has not provided a rough estimate of the magnitude of the radiation doses that could result from the criticality accidents that they have identified. It would be very difficult to estimate the doses without having the controlling factor, i.e., the power level. Obviously, the radiation from a "zero" power criticality is "zero," the radiation from a milliwatt level criticality is very small, and so on For such improbable criticality accidents, the staff has not provided rough estimates of the potential duration of the criticality accident, the total number of fissions that would occur, nor the resulting dose rates in the areas that would be occupied by workers. Even if one were to assume that such an unlikely criticality accident could result from a dispersed fissile mass such as that found at a low-level waste site, the kinetics of the occurrence would severely limit its duration, the number of fission events, and, therefore, the radiological consequences.

While the staff has not quantified the risk, including probabilities and consequences, associated with disposal of special nuclear material by persons regulated by Agreement States, I believe both the probabilities and consequences associated with disposal as is currently done are so low as to preclude additional and continuing expenditure of resources in this area. I do not see a compelling need to intrude into the Agreement States' authority in this area. 