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BRANCH

Mr. Samuel J. Chilk
Secretary of the Commission
Nuclear Regulatory Commission
Washington, D.C. 20555-0001

March 8, 1994

Dear Mr. Chilk:

**SUBJECT: COMMENTS REGARDING THE DRAFT FOR DEVELOPING
RADIOLOGICAL CRITERIA FOR DECOMMISSIONING**

Stone & Webster Engineering Corporation (Stone & Webster) submits the following comments on the subject draft in response to Dr. Donald A. Cool's request dated January 27, 1994 and as a participant in the participatory process. Stone & Webster fully supports the NRC in its effort to establish a clear and consistent regulatory basis for determining the extent to which radioactive contamination must be removed from sites and facilities during decommissioning. Stone & Webster is pleased to have the opportunity to provide constructive input to the NRC on development of these criteria based on our actual experience performing decontamination and decommissioning projects.

The draft establishes a goal of 3 mrem/yr and limit of 15 mrem/yr for the Total Effective Dose Equivalent (TEDE) to an individual from residual radioactivity that is distinguishable from background. However, nowhere in the draft is a sound technical basis provided nor are the recommendations of the International Commission on Radiological Protection (ICRP) or the National Commission on Radiological Protection (NCRP) addressed. These scientific bodies, both dedicated to the protection of man and his environment from radiation, recommend a limit of 100 mrem/yr TEDE and a screening level of 25 mrem/yr coupled with the application of ALARA. Their recommended approach, which has been reiterated by the American Nuclear Society and Health Physics Society, provides the flexibility needed to accommodate site specific factors so that a meaningful cost benefit determination can be made.

The draft states that the goal of decommissioning should be to reduce residual radioactivity at a site to levels that are indistinguishable from background and establishes 3 mrem/yr as that value. However, as documented by the NCRP in "Exposure of the Population in the United States and Canada from Natural Background Radiation" (NCRP94) and summarized most recently by the Health Physics Society in their Position Statement on "Return to Background", background radiation dose rates and their variation

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substantially exceed this value. The HPS concludes that "For the purposes of limiting lifetime risk, a site-specific dose rate of 10-30 mrem/yr greater than the regional average is well within the natural variations of background and should be considered equivalent to background ...". The proposed goal and limit values do not appear to recognize this natural occurrence. The staff must avoid arbitrarily establishing levels that cause exorbitant resources to be expended on marginal or negligible improvement in public health and safety.

The draft states that the selected value be "... consistent with other decisions of both the EPA and NRC for unrestricted access to areas". EPA recently summarized the basis for regulatory exposure to radioactive materials in EPA 402-R-94-005, "The Radiation Site Cleanup Regulation, An Interim Progress Report", February 1994. EPA states that their radiation protection regulations and guidances, including Superfund, specify standards that correspond to risk limits in the range of 10^{-2} to 10^{-4} . EPA uses a 30 year period of exposure for Superfund sites. For a 30 year period of exposure a 30 mrem/yr decommissioning limit criterion would result in a risk of about 5×10^{-4} which is in the acceptable risk range.

Proposed Paragraph 20.1404 "Radiological Criteria for Unrestricted Release", for Amendment to 10CFR20 may be interpreted as meaning that both sub-paragraph (a) and (b) must be met to satisfy the criteria for unrestricted release. This should be rewritten to be consistent with Paragraph 20.1402 "Concepts" to specify the limit value, and state that the ultimate dose value achieved below this level must be ALARA. A quantitative value for the goal should not be specified to avoid establishing a "defacto limit" to which facilities and sites will have to be remediated for unrestricted release. This "defacto limit" would have the effect of circumventing the ALARA process, a process that has demonstrated utility in establishing practical solutions.

The draft states that "The Commission is publishing regulatory guidance along with the rule which describes methods for site specific implementation of the criteria." We strongly suggest that this guidance be distributed for comment before promulgation of the rule to allow for adequate review of the draft rule as well as the guidance. Addressing acceptable means of compliance concurrent with rule development should provide the basis for an open dialogue founded on consideration of practical compliance issues and should more readily lead to a more workable rule.

Stone & Webster agrees in principle with the provision which allows for restricted release of a site under prescribed conditions. This is a practical approach which demonstrates realization that for some sites it may not be appropriate or warranted to remediate to unrestricted levels. However, the role of the site specific advisory board must be better defined and a clear procedure for resolution of differences between the licensee and the board is needed in the rule or supporting guidance. Otherwise, the net result will be to discourage timely cleanup and impose cleanup criteria inappropriate to actual use of the site with an associated waste of resources.

The draft includes requirements for minimizing contamination. Stone & Webster believes that, as evidenced by the large reduction in waste generation volumes, licensees have been extremely effective in implementing programs to minimize contamination and resultant wastes. Hence, this requirement solves no problem and should not be imposed because it will divert resources from successful existing programs. Requirements addressing licensing for new facilities or substantial modification to existing facilities are more appropriately addressed in Part 30, 40, 50, etc. instead of Part 20.

Stone & Webster also agrees in principle with the draft approach on "Finality". Once a site is decommissioned and license terminated, further cleanup would be required only if new information indicates it will be necessary to protect the public against significant radiological risks. This would be the case only if the site realistically poses significant public or environmental harm considering all impacts and costs, both radiological and non-radiological.

In summary, Stone & Webster encourages the NRC to revisit the basis for the criteria with a goal of adopting criteria that will protect public health and safety while permitting sites to be cleaned up in a cost effective manner. Stone & Webster appreciates the opportunity to submit these comments and if we can be of further assistance as you review our comments please call Dr. Joseph M. Cardito at (617)589-6938 or me at (617)589-1291.

Sincerely,



R. B. Bradbury
Chief Engineer,
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