ATTACHMENT 5

Letter from Charles Meinhold
Dated 12/15/98

ATTACHMENT 5: DECEMBER 15, 1998, LETTER FROM CHARLES B. MEINHOLD, NATIONAL COUNCIL ON RADIATION PROTECTION AND MEASUREMENT, TO DENNIS SERIG, U.S. NUCLEAR REGULATORY COMMISSION, SUBJECT PEER REVIEW OF THE METHODOLOGY AND ITS APPLICATION AS DESCRIBED IN THE 9-18-98 DRAFT NUREG ENTITLED, "RISK ANALYSIS AND EVALUATION OF REGULATORY OPTIONS FOR NUCLEAR BY-PRODUCT MATERIAL SYSTEMS,"; . . . .

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Subject: Peer Review of The Methodology and Its Application As Described in the 9-18-98 draft NUREG entitled, "Risk Analysis and Evaluation of Regulatory Options for Nuclear By-Product Material Systems,"; Contract No. NRC-02-98-001, "Nuclear Byproduct Material Risk Review," JCN J5215

Dear Dr. Serig:

As part of Modification 4 of the subject contract, I have reviewed in detail the 9-18-98 draft NUREG entitled, "Risk Analysis and Evaluation of Regulatory Options for Nuclear By-Product Material Systems," which was prepared for the Nuclear Regulatory Commission by Scientech, Inc.

For many years the nuclear related industries have questioned the efficacy of the regulatory burden placed on licensees by the Nuclear Regulatory Commission. At the same time any licensing authority is responsible to the nation for ensuring that their licensees act responsibly in protecting workers, members of the public and the environment. The objective of reconciling these two apparent differences is the objective of this study.

The approach taken in this document exceeds admirably in developing an engineering based approach to evaluating the appropriate level of regulatory oversite based primarily on the radionuclides used, the quantities involved, together with all of the radiological engineering and radiological protection elements used to limit exposure to these materials. The database which supports this effort is extensive. For each task (receipt, storage use) within a

licensing category (or "system," as used in the report) i.e., laboratory use (R&D, unsealed, synthesis quantities) through irradiators (pool) the potential exposure is calculated for the full family of sequences involving the loss of protection functions (shielding, containment, failure of the radiation protection program, etc.). This database forms the cornerstone of the effort.

Given the potential exposure, the authors are able to develop levels of exposure as they relate to the nature and extent of the required regulatory response. These range from highly prescriptive regulatory requirements to the implied reliance on the licensee need to provide a safe and healthful workplace when the potential exposures are below those of regulatory concern.

This overall approach has enormous potential. Clearly there are policy issues involved in the selection of the doses used for the various classifications of regulatory requirements. The authors have suggested quite reasonable values which should promote helpful discussion.

The methodology and assumptions needed to calculate the miriad scenarios are given in general terms in the main body of the report but the effected communities (the regulators, the licensees, the workers and members of the public) need to have access to the detailed information on these topics as given in the database. While a few of the input values were specifically reviewed and appeared to be reasonable, people familiar with each specific category should carefully review the assumption used in calculating the potential doses. Although the assumptions are technically defensible and carefully referenced when the information is available, having these reviewed by experts in each category is a necessary extension of this work.

The draft provides an important step in developing the data and an approach to reducing the regulatory burden while ensuring the safety of the worker and the public are ensured. One additional point is that the need to address perceived risks is mentioned in the draft but not included in the final analysis. The implication which I believe is implied is to expect the licensee to provide the level of protection they need to reduce the potential for public concern and potential litigation.

In summary, an excellent approach and a report which provides the detail necessary for the Commission to begin a process of extending this work in a manner that will ensure the overall objectives of reducing the burden and still ensuring the health of the worker and the public.

Sincerely yours,

Charles B. Meinhold
President

cc: D. Umbel, PO, NRC T-8-A-23
R. Mann, NRC T-7-I-2
J. Meyer, SCIENTECH, Inc.