



NUCLEAR MANAGEMENT AND RESOURCES COUNCIL

1776 Eye Street, N.W. • Suite 300 • Washington, DC 20006-2496
(202) 872-1280

December 4, 1987

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
M/S P - 428
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Dr. Murley:

NUMARC'S members have become concerned that the use of extremely old guidance for establishing the "hot particle" dose limit and dose calculational method has become a regulatory problem although not a significant occupational health issue in the minds of the industry's radiation experts. We understand that a special Subcommittee assembled by the National Council on Radiation Protection and Measurements (NCRP), at NRC's request, is working on recommendations that could be used by the staff in developing a standard applicable to hot particles for incorporation into 10 CFR 20 at some future date. Unfortunately, the earliest these recommendations will be available is the spring of 1988. We understand that formal implementation of the NCRP recommendations would then require an additional number of months, at least.

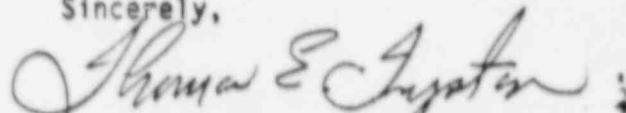
A draft interim standard for hot particle dose assessment has been discussed in public meetings. Apparently, staff support for this interim standard has been lacking based on the staff's belief that the industry has the hot particle problem "under control". We believe it is under control from a health physics position, but not from a regulatory position. An interim standard would offer a near term solution to this dilemma by providing an appropriate dose assessment approach until the NCRP recommendations can be incorporated into regulations.

The need for an appropriate standard continues to be a high priority for a considerable number of utilities that have encountered hot particles. Those utilities not yet encountering these particles have increased substantially the depth and scope of their monitoring programs as an added protective measure. This has resulted in a significant expenditure of resources to ensure protection of the workers. However, there is a legitimate concern among the scientific and health physics community working on the problem that the dose limit and assessment methods (i.e. for skin of whole body and for the extremities) presently being used by the NRC staff for evaluating the dose resulting from a worker's exposure to hot particles, (i.e. to a tiny point on the skin), are not appropriate and may result in misunderstandings by employees. The present NRC guidance in IE Information Notice No. 86-23, in the absence of specific regulations, indicates that compliance with 10 CFR 20.101(a) can be demonstrated by calculation of skin dose averaged over 1.0 cm² at a depth of 7 mg/cm² using information from NBS Handbook 59. Although this 1954 handbook provided the general basis for the present regulations, later scientific information is now available in Report 26 issued by the International Commission on Radiological Protection and,

more recently, NCRP Report No. 91. More up to date guidance also was included in the 1986 proposed revision to 10 CFR 20. These documents include recommendations that would result in more realistic dose assessments and in our judgement, would be appropriate for consideration and possible adoption by the NRC staff until the hot particle recommendations by NCRP could be implemented.

NUMARC is currently working with the Edison Electric Institute Health Physics Committee's skin contamination group which is addressing the hot particle problem resulting from the current NRC guidance. They are in the process of developing a technical report which will identify concerns resulting from the NRC's use of very conservative guidance for evaluating this dose and making dose assignments. This report will include data on the increased costs attributed to the current guidance and will be submitted to the Commission staff when completed, probably later this month. In the meantime, as utilities improve their programs in this important area, we encourage you and your staff to evaluate the regulatory aspects of this problem, using the latest scientific data, to determine if it is feasible to utilize more appropriate dose limits and assessment methods on an interim basis until formal rule changes can be implemented. If development of an interim standard is determined not to be feasible, then it is extremely important to expedite formal implementation of the NCRP recommendations if possible. We would encourage further discussion on this issue at an early date. If there are any questions regarding this request, please contact Dave Harward, Manager of the Radiological and Environmental Group of the Operations, Management and Support Services Division of NUMARC, or me.

Sincerely,



Thomas E. Tipton, Director
Operation Management and
Support Services Division

TET:hbm

cc: J. Taylor
E. Beckjord