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From: Thomas O'Brien
To: Alan Roecklein
Date: Mon, Aug 7, 2000 10:55 AM
Subject: CRCPD

Hi Alan-

Got your message. Kathy talked with Pat Gorman at CRCPD last week. Based on thier conversation, our suggested approach is to put a brief statement in the newsletter about our Unified Skin Dose limit plan.

CRCPD also indicated that they would be willing to put additional information on their website. The attached document provides the revision that Kathy and I discussed.

Thanks

Tom

Statement for CRCPD Newsletter

NRC TO DEVELOP A UNIFIED SKIN DOSE LIMIT

NRC staff has prepared this statement to provide notice of plans to develop a single, unified skin dose limit that would apply to any shallow dose equivalent (SDE) to the skin regardless of the source or geometry of the irradiation. This unified limit would serve as a limit to dose from DRPs on or off the skin, dose from small areas (< 1 cm²) of skin contamination, from large area skin contaminations, and SDE that might result from any other external radiation source. The opportunity for formal comment will be available through the normal process followed in the development of a draft proposed rule. Additional background information on the plan can be found on the CRCPD website at www.crcpd.org. If you have any questions concerning the above plan please contact Alan Roecklein, Office of Nuclear Reactor Regulation, 301-415-3883, or email at AKR@NRC.GOV

Additional Information to be provided via CRCPD website:

Background

On October 23, 1998 the NRC staff submitted a rulemaking plan (Rulemaking Plan - Protection Against Discrete Radioactive Particle (DRP) Exposures (10 CFR PART 20) SECY-98-245) to the Commission that proposed the use of a DRP Dose Constraint, or action level, of 300 rads as a program design objective to establish DRP survey and contamination control programs. The rulemaking also added a DRP Dose Limit of 1000 rads intended to provide further assurance that extremely high DRP doses would not occur. In a Staff Requirements Memorandum dated December 23, 1998, the Commission approved staff's proposal to develop a rulemaking with the stipulation that a 500 rad dose limit to the skin, rather than the proposed 1000 rad dose limit, be set to be consistent with the draft recommendations of the National Council on Radiation Protection and Measurements (NCRP).

In an October 27, 1999 memorandum, the NRC staff informed the Commission of a change in direction concerning the Rulemaking Plan necessitated by the receipt of new technical information. In a January 31, 2000 memorandum to the Commission, staff recommended establishing a single, unified skin dose limit that would apply to any shallow dose equivalent to the skin regardless of the source or geometry of the irradiation and provided a revised schedule for completing the technical work and developing the rulemaking. The Commission approved staff's recommendation for the rulemaking initiative in Staff Requirements Memorandum (COMSECY-00-0009), "Rulemaking on Discrete Radioactive Particle Dose Constraint," dated March 16, 2000. The current schedule calls for the proposed rule to be completed by mid 2001.

The NRC is now aware that interim guidelines (i.e., Information Notice (IN) No. 90-48, "Enforcement Policy for Hot Particle Exposures," issued on August 2, 1990) put in place to control DRP doses to workers are causing external exposure of workers due to frequent

monitoring to prevent exceeding the guidelines. The health implications of the external dose are believed to far exceed any health implications associated with the DRP doses being avoided. It is now also apparent that dose from a DRP on the skin, and stationary for the entire period of exposure, is a very rare event. Most DRP doses are from particles off the skin and likely to be moving around so that a relatively large (> 1 cm²) area is irradiated uniformly.

As an initial proposal, the NRC staff is considering adopting the limit recommended by the NCRP in its Report No. 130 for DRPs, as a dose limit applicable to all SDE. This approach would also include revising the definition of SDE. Specifically, the NRC is considering a dose limit that would be:

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The annual limits ... to the skin and to the extremities ... A shallow-dose equivalent of 50 rems (0.50 Sv) to the skin or to any extremity, averaged over the most highly exposed 10 square centimeters.

Shallow-dose equivalent, which applies to the external exposure of the skin or an extremity, is taken as the dose equivalent (absorbed dose x Quality factors) at a tissue depth of 0.007 centimeter (7mg/cm²).

Note. The proposed limit would be an annual limit but it would be made clear that skin dose is additive for skin exposures that overlapped the same areas, but if skin doses were delivered to different areas within the same year, the assigned SDE would be for the part of the body or extremity receiving the highest dose.

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