NOTE TO: Document Control
Room 016

FROM: R. E. Alexander
Occupational Health Stds. Branch

Please place the attached document in the PDR using the following file and file points:

PDR File (Select One)		Related Documents (Enter if appropriate)	
Proposed Rule (PR)		ACRS Minutes No.	
Reg. Guide		Proposed Rule (PR)	
Draft Reg. Guide		Draft Reg. Guide	
Petition (PRM)		Reg. Guide	
Effective Rule (RM)		Petition (PRM)	
		Effective Rule (RM)	
		Federal Register Notice	
		SD Task No.	
		NUREG Report	
		Contract No.	

Subject: Memo dtd. 8/6/79
Re: Minutes of July 9, 1979 Meeting

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LAWRENCE LIVERMORE LABORATORY

Hazards Control Department

August 6, 1979

TO: Personnel Dosimetry Overview Committee

FROM: G. W. Campbell

SUBJECT: Minutes of July 9, 1979 Meeting

The meeting was convened at 8:00 pm on July 9 in Philadelphia with Don Jones, Eric Geiger, George Campbell, and R. A. Oswald (for Bob Wheeler) in attendance.

The following items were discussed:

(1) Recommend that the gamma standard be changed to Cs-137 to decrease the problem of obtaining electron equilibrium. Also, consider a different beta source.

(2) Tighten the limit "L" for those categories that allow a processor to pass by reporting a zero dose when the dose isn't zero. Perhaps the standard should use B + S instead of B + 2S. The L = .3 may be too strict for some higher dose categories. For example, if the processor uses the standard ± 15% TLD's obtained from Harshaw and he has any bias, he stands a good chance of not passing the test.

(3) Consider a moderated neutron source closer to real world spectra. Bob Wheeler objects to this suggestion — see his letter which is attached.

(4) Ask for more data from Phil Plato; for example, bar graphs of S, B, $\frac{2S}{L}$ and $\frac{B}{L}$ by source type for each category. Also, consider combining some intervals and see if the increased sample size would lead to a better statistical analysis of the data. I talked to Phil Plato and he seemed willing to try some of these data reduction approaches. In summary, it was suggested that we ask NRC to direct Plato to recompute existing data to indicate the relative importance of B + 2S, recompute data using $| B + S | \leq L$ instead of B + 2S and recompute with fewer intervals (combine with two or more intervals) as well as histograms using the standard deviation and the bias.

(5) Ask NBS to insure that the R to Rem conversion values contained in the standard are correct.

(6) Write a letter to NBS in support of a stronger beta calibration program.

(7) The standard has the same problem that many standards have in that it is hard to relate it to the real world. Therefore, we feel that a statement should be put in the NRC regulations that states . . . if a processor fails a category, then NRC (or someone designated by them) will study the processor's personnel dosimetry program to see if the test imposed by the standard relates to the actual dosimetry problem being addressed by the processor's dosimeter, i.e., type of source. If the processor's dosimetry system is sufficient to assess his real world dosimetry problems, then NRC should pass the processor in the failed category in question. To say this another way, a board could be appointed to review anyone that doesn't pass a test. If the failure was due to a clerical error, an outlier, etc., then the board could pass the processor. Bob Alexander and I have talked about this concept and he agrees it is a reasonable concept to write into NRC regulations.

(8) Make an effort to insure that Congress does not get the idea the whole personnel dosimetry industry is in sad shape. Impress on NRC that the purpose of the pilot program was to test the standard and tnat the standard should be altered to reflect the results of the pilot study. Then, and only then, would it be proper to test the processors. This may mean continuing or redoing the pilot study for at least another year.

Our next meeting will be with NRC in Rockville, Maryland on August 31, 1979 at 1:00 pm.

George W. Campbell, Chairman
Personnel Dosimetry Overview Committee

GWC:ah

Attachment

cc: Mr. Robert Alexander
Dr. Margarete Ehrlich

R. S. Landauer, Jr. & Co.
Division of Technical Operations, Incorporated

Glenwood Science Park
Glenwood, Illinois 60425
Telephone (312)755-7000

July 20, 1979

George Campbell
Lawrence Livermore Lab.
Hazards Control Department
University of California
P.O. Box 5505
Livermore, Ca. 94550

Dear George:

I want to apologize again for not being able to attend the Overview Committee Meeting in Philadelphia. Dick Oswald found it quite enlightening and reported to me a number of the areas on which you have apparently achieved some level of agreement.

In two areas I am quite strongly opposed to the direction of the committee and wish to pass my comments along to you. First, I am opposed to the concept of using a moderated Cf-252 source for the neutron standard. Using the concept of source moderation leads to the possibility of significant ambiguity in calibration and intercalibration between labs and serves no useful purpose. As of today, all neutron passive personnel monitors are energy dependent and require some knowledge of the spectrum for interpretation. As a result, the recommended change to a moderated source would serve no useful purpose and likely would add more confusion and difficulty in comparison. Only a different calibration factor would be required but with a larger statistical error.

Second, the idea of using a lower energy beta source is probably a good one. However, using a uranium slab certainly does not represent "working type" exposures. Using a point source is entirely more realistic and again as above, would not serve to improve the standard. Lee Phillips at Brookhaven has done a lot of work on the problems of using beta slabs and their impact on personnel monitor dose interpretation. There are many variables which would have to be considered before such a change would be viable.

Finally, although the question of outliers must have been discussed it is difficult to determine a good approach to this problem. Considering the large number of dosimeters involved it seems only proper to allow a certain number of outliers. Statistically it would probably be difficult to avoid this. I also do not have a solution to this problem. It would seem that an exposure of 1,000mR reported as zero should be disqualifying. However, possibly one outlier should be permitted per interval which would be treated separately and say not by greanter than ± 50 or 60% of the delivered exposure.

I would appreciate any feedback that you might have. I look forward to seeing you the next time we convene and also I would appreciate a copy of the proceedings of your meeting.

Sincerely,

R. S. LANDAUER, JR. & CO.
DIV. OF TECHNICAL OPERATIONS, INC.

Bob

Robert V. Wheeler
Assistant General Manager

RVW:ml