

LETTER TO THE EDITOR



SHIELDING NOMENCLATURE

Dear Sir:

It is with some regret that I feel the necessity of taking further issue with Francis Clark on the subject of shielding nomenclature, this time in connection with his article on gamma-ray buildup factors for sand, air, and wood, which appeared in *Nuclear Applications*.¹ While I have no particular comment to make on the technical content of this article, my interest in standardization of shielding nomenclature impels me to take issue with anyone who persists in the usage of terminology which is clearly inconsistent with that already accepted as standard in the profession.

I agree whole-heartedly with Clark that, as long as language deficiencies in specifying physical concepts remain, it is necessary to use nonstandardized terms which require only careful definition at the time and place of use. Nonetheless, when an author needs to pick out a name for a concept, it is very confusing, to say the least, for him to appropriate a term already standardized by accepted authority to mean something else.

To get down to the case in point: The fact that the author persists in using the term "exposure" in connection with gamma-ray deposition of energy in tissue is clearly inconsistent with definition of exposure sanctioned both by the International Commission on Radiological Units² and by the USA Standards Institute.³ Both these authorities clearly indicate that an *air* detector is the basis for this concept. What Clark has calculated

appears to me to be best termed "tissue kerma buildup factors in (shielding medium name)."

Let me take the opportunity to comment generally on Berger's work, as long as it is made on the basis of comparison with Clark's results. E. E. Morris and I have had occasion to check by both Monte Carlo and moments techniques some of Berger's work on energy absorption buildup factors, both for water and air; and we have obtained agreement with him within a very few percent. In my opinion, they are the most accurate data available today on buildup factors in these materials.

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REFERENCES

1. F. H. CLARK, "Gamma-Ray Buildup Factors for Sand, Air, and Wood (Cellulose)," *Nucl. Appl.*, **6**, 588 (1969).
2. "Radiation Quantities and Units," ICRU Report 11 (September 1968).
3. "USA Standard Glossary of Terms in Nuclear Science and Technology," USAS NI, 1-1967 (October 1967).