



RH-905-1

MIDWEST CHAPTER HEALTH PHYSICS SOCIETY

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PROPOSED RULE PR-20 (28)
(45 FR 18023)

June 12, 1980

Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Reference: Federal Register, Vol. 45, No. 56, March 20, 1980,
pp 18023-18026; "Advanced Notice of Proposed Rule-
making: Request for Public Comment," with regard
to revision of 10CFR Part 20.

Gentlemen:

We welcome the opportunity to make comment in advance of your
proposed rulemaking (see reference). Our input and recommen-
dations are provided below. Please let us know if further in-
put would be appropriate as this project proceeds.

In general, we must question the need for such a major revision
of 10CFR20. We fully appreciate the need for a periodic up-
date of radiation protection legislation in order to stay in
step with the state-of-the-art. Changes to require the combi-
nation of internal exposure with external exposure (as recom-
mended in ICRP 26) or to update the MPC's to agree with the
latest recommended annual limits of intake (ICRP 30) should be
made on a timely basis. However, we know of no change of basic
philosophy or dose equivalent limits which would recommend the
need for the proposed massive revision of the code.

The introduction of major revisions will introduce a new ambi-
guity in the field of radiation protection. It will place the
profession on a new and probably unnecessary learning curve
with regard to their implimentation.

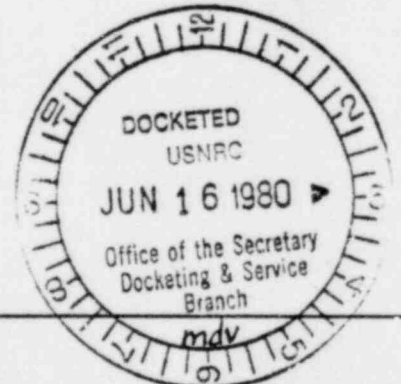
In standards development constancy is a major virtue. Changes
ought to be made only when overwhelming evidence requires them.
At the present we see no need for major revisions, and thereby
conclude that they ought not be made.

In particular, our comments follow:

I. ESSENTIAL ELEMENTS

a. Radiation Protection Principles

Acknowledged by card. 6/17/80. mdv



L-4-1420

If no other address is given,
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The linear hypothesis probably gives a conservative "worst case" estimate of effect (see ICRP 26, paragraph 28). To formalize as legal fact, this unproven hypothesis is inappropriate. Quoting from ICRP #26, the linear hypothesis "... may lead to an overestimate of radiation risks, which in turn could result in the choice of alternatives that are more hazardous than the practices involving radiation exposures. Thus, in the choice of alternative practices, radiation risk estimates should be used only with great caution and with explicit recognition of the possibility that the actual risk at low doses may be lower than that implied by a deliberately cautious assumption of proportionality." From a legislative point of view the adoption of the linear hypothesis is self-defeating since it would argue that high individual dose equivalents would be justified if they allowed a reduction in aggregate population dose equivalent. To the extent that the linear hypothesis is conservative, which it almost certainly is, such a situation would result in an increased aggregate detriment. A total appreciation of the situation requires an understanding of linear hypothesis error effects, non-stochastic effects and consideration of a theory of acceptable harm. We highly doubt that it would be appropriate to incorporate such philosophical considerations in the CFR. We recommend that any mention of the linear hypothesis is superfluous to the implementation of dose limits and that it be dropped from the proposed rule change. We recommend that 10CFR20 limit itself to numerical limits and standards.

- (1) The requirement to demonstrate a priori that a net positive benefit will result from any radiation exposure will at best be nearly impossible to implement and at worst could conceivably halt the use of radiation in medical, biological or chemical research, if not also throughout the field of radiotherapy. Since, in principle and in practice, the net benefit of research is unpredictable, the literal interpretation of such a requirement could be disastrous.

b. Standards for Individual Occupational Exposures

- (2) ICRP 26 recommends that, "... sufficient accuracy is obtained by using a single effective dose equivalent limit regardless of age or sex."

c. Standards for Exposure of the General Public

General comment ... what are "specific population groups?"

- (1) Would these limits supersede 40 CFR part 190 limits, which are already law?

- (2) Would these limits supersede 10 CFR part 50, Appendix I limits, which are already law?
- (5) This is a good point. TMI-2 experience has shown that in the post-accident period, because of public demand, a plant must suddenly become a zero release plant which makes recovery more difficult.
- (8) This is a good point which could relieve some of our solid waste inventory problems without causing any adverse environmental impact.

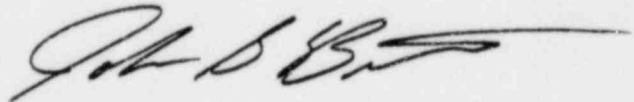
II. PART 20 IMPROVEMENTS

a. Radiation Protection Principles

- (1) We recommend that the CFR is not an appropriate medium of public education, nor need it be in order to serve its stated function.

To reiterate it is our opinion that while 10CFR20 deserves to be updated to take into account the state-of-the-art, we recommend that a major rewrite as proposed would be counterproductive to the purpose of radiation protection.

Sincerely yours,



John S. Britis
Certified Health Physicist
Chairman - Legislative Committee

JSB:clm