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Howard J. Larson  
Vice President

April 24, 1979

Mr. Samuel J. Chilk  
Secretary  
U.S. Nuclear Regulatory Commission  
Matomic Building  
1717 H Street, N.W.  
Washington, D.C. 20555

Dear Mr. Chilk:

The Forum's Subcommittee on Occupational Radiation Protection has reviewed the Commission's proposed rule to amend 10 CFR Parts 19 and 20 which appeared in the Federal Register of February 20, 1979. This proposed rule would eliminate the accumulated dose averaging formula, §(N-18), the Form NRC-4 exposure history, impose a 5 rem annual dose limitation and retain the 3 rem per quarter limit. The Subcommittee's comments are directed primarily to the issue of eliminating the dose averaging formula which is an area of particular concern.

The proposed elimination of the dose averaging formula raises significant questions that appear to need further public input and discussion prior to final NRC action. In this respect, the Subcommittee had the following observations on the proposed action:

1. The Federal Register notice contains no rationale for elimination of the dose averaging formula other than; (a) the ICRP has made such a recommendation (b) deletion of the formula could have reduced the radiation dose of some 320 individuals who received more than 5 rems in 1977 and (c) the action could cause some licensees to take further action to reduce occupational doses.
2. The proposed rule change is apparently still being assessed by the NRC staff according to the wording in the Federal Register notice. This would indicate that the staff evaluation is preliminary and not yet completed.
3. The impacts of reducing flexibility for performing critical jobs and the possible increase in cumulative dose resulting from the proposed change need to be evaluated.

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4. The proposed rule change does not appear to take into full consideration extensive and continuing efforts by the nuclear power industry and the NRC to further reduce occupational exposures.
5. The Federal Register notice contains no scientific or biological data which would support the need to change the current limits. The available large body of scientific evidence still strongly supports the conclusion that the current radiation standards adequately protect human health. Controversial studies that have disagreed with this view have been extensively critiqued by qualified scientists, including those used by NRC, and found to be inconclusive with inherent faults in the methodology used. We have not yet seen a scientific evaluation supportive of these controversial studies.

There is a significant inconsistency in the proposed NRC rule. Although ICRP has recommended the deletion of the 5(N-18) formula, that group also recommended a companion provision in lieu of the formula to permit exposures above 5 rem per year in special circumstances. Thus, the NRC has chosen to adopt one part of the ICRP recommendation and not the other without supporting justification.

The Subcommittee fully supports the objective to reduce occupational radiation exposures to the lowest level reasonably achievable. The NRC indicates that the 320 individuals receiving in excess of 5 rems in 1977 represent less than 0.5 percent of the individuals participating in NRC-licensed activities. This is certainly a low percentage of the total number of workers exposed which is also indicative that the dose averaging formula has not been abused or misused. The majority of this group of workers in the nuclear power industry usually exceed 5 rems per year on rare occasions when particular experience or special skills are needed. The question of performing certain critical tasks without the availability of some type of flexibility needs to be fully evaluated.

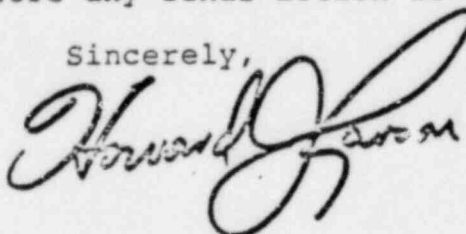
There has been, and continues to be, a significant effort by the nuclear power industry to reduce occupational exposures through improved procedures and modifications at nuclear plants, review of plant designs, research studies to minimize sources

April 24, 1979

of exposure and studies to identify sources and to evaluate better techniques for exposure reduction. In the latter category, for example, the Atomic Industrial Forum, and others, have conducted a significant number of technical generic radiation exposure reduction studies. The AIF studies completed or underway are indicated on the attached sheet.

It is the judgment of the Subcommittee that there is a continuing need for providing flexibility in the 5 rems per year dose limit under special circumstances. Accordingly, there are a number of questions concerning this issue which warrant further in-depth study by the Commission before any final action is taken.

Sincerely,



HJL:hjm<sup>3</sup>  
Enclosure

AIF TECHNICAL GENERIC EXPOSURE REDUCTION STUDIES

1. Compilation and Analysis of Data on Occupational Radiation Exposure Experienced at Operating Nuclear Power Plants, AIF/NESP-005, September, 1974.
2. Potential Benefits of Reducing Occupational Radiation Exposure, AIF/NESP-010, May, 1978.
3. A Preliminary Assessment of the Potential Impacts on Operating Nuclear Power Plants of a 500 mrem/year Occupational Exposure Limit. Report by AIF Subcommittee, April, 1978.
4. Operating/Manpower Considerations Related to Reduced Exposure Limits, NESP contract study in progress. Completion estimated early summer, 1979.
5. Engineering Techniques for Reducing Radiation Exposure at Operating Nuclear Power Plants. Study underway by AIF Subcommittee. Completion estimated June, 1979.
6. Compendium of ALARA Practices at LWR Plants. NESP study in progress. Completion estimated in summer of 1979.

MAINTENANCE & ENGINEERING CENTER

April 5, 1979

E. L. Thomas  
Assistant Vice President - Engineering  
Air Transport Association of America  
1709 New York Ave. N.W.  
Washington, D.C. 20006

Reference: Engineering & Maintenance Executive Memo No. 79-15

Dear Mr. Thomas:

Referenced memo requested comment on Nuclear Regulatory Commission proposed amendments to 10 CFR Part 20 on Radiation Dose Limiting Standards by April 16, 1979.

The following comments apply to the proposed amendments as shown on the attached Federal Register pages to referenced memo beginning on page 10389, column 3.

Paragraph 19.13, 10 CFR Part 19 new paragraph e.

Notifications and reports to individual workers terminating employment.

Comment: The proposed amendment is logical and is supported.

Paragraph 20.3(a), 10 CFR Part 20

Definition of calendar year.

Comment: No objection

Paragraph 20.101, 10 CFR Part 20

Changing undesignated center heading to delete the word "permissible."

Comment: No objection.

Paragraph 20.101, 10 CFR Part 20

Revised radiation protection standards for individuals in restricted areas.

Comment: Those engaged in radiography in American Airlines can operate within the proposed dose limits. However, coupling the revised limits with removal of the 5(N-18) formula will adversely affect some individuals/companies in the radiographic business.

E. L. Thomas

April 5, 1979

It appears that the dosage limits intended to cover the unusual situation have been used by some companies/individuals as the normal situation. That is to say they used the exceptions provided by subparagraphs 20.101(b), (1) and (2) to permit exceeding quarterly and/or annual limits. One half of one percent were in this category to quote 1977 data available to NRC.

There will be instances where quarterly or annual limits will be exceeded. If the 5(N-18) formula is dropped, what happens to the individual who exceeds the limit without physiological damage but cannot practice his vocation (radiography) until passage of some unspecified time? It appears that an "escape" like the 5(N-18) formula is required for these situations.

Paragraph 20.102, Determination of Prior Dose

Comment: As worded, the proposed amendment is unclear and puts the burden of knowing prior exposure on the individual. Also, if the quarterly dose limit is 3 rem, why is such a statement required if the individual "is likely" to receive .25 rem (5% of 5 rem the annual limit). What does "is likely" mean? Does it mean "probably will?" Does it mean "May?"

Does the phrase "from sources of radiation possessed or controlled by other persons" apply to the entire paragraph 20.102 or just to the new employee?

In other words, does the employee of long standing sign a written statement that he has had no prior dose during the current calendar year prior to first entry...into the restricted area...during each work assignment? Or, is the whole paragraph applicable only to the new employee?

Assuring the safety of the individual is more positive in the present wording of paragraph 20.102.

Paragraph 20.104, Exposure of Minors

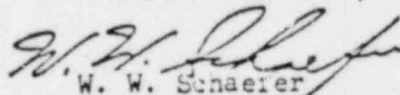
Comment: No objection.

Paragraph 20.202, 10 CFR Part 20 Subparagraphs (a) (1) and (2) Personnel Monitoring

Comment: No objection.

Very truly yours,

AMERICAN AIRLINES, INC.

  
W. W. Schaefer  
Senior Director  
Quality Assurance