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Vice President

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

Attention: Docketing & Service Branch

Gentlemen:

In response to the Advance Notice of Proposed Rulemaking for a possible revision to 10 CFR Part 20 announced in the Federal Register of March 20, 1980, we are pleased to submit the enclosed comments prepared by the Atomic Industrial Forum's Subcommittee on Occupational Radiation Protection.

Although the Subcommittee believes that a revision could be beneficial in clarifying and simplifying the regulations, it also recommends such a revision be undertaken with deliberation and care in order to maintain public confidence in the current basic radiation standards. In this connection, the conservatism inherent in the current standards as established by the leading national and international scientific groups in radiation protection should be clearly stated by the NRC. If substantial revisions are contemplated by the NRC, a public meeting to explain the rationale for such revisions should be considered as a means for achieving better public understanding.

The public notice of the proposed revision also includes information which indicates the NRC may be considering the inclusion of certain implementation details that previously have been contained in regulatory guides, NUREG reports and as specific license conditions. The Subcommittee believes that the present system of separating regulations from implementing guidance should be maintained since it has been workable and provides needed flexibility in the regulatory process.

We would be pleased to discuss the enclosed comments with members of the Staff.

Sincerely,

Howard J. Larson

HJL:hmh
Enclosure

Acknowledged by card. 6/20/80

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AIF SUBCOMMITTEE ON OCCUPATIONAL RADIATION PROTECTION COMMENTS ON ADVANCE NOTICE OF RULEMAKING CONCERNING PROPOSED REVISION TO 10 CFR 20

GENERAL COMMENTS

1. Need to Revise 10 CFR 20

In general, the Subcommittee agrees that a revision would serve a useful purpose if it would benefit the general public, the regulators and the licensees in terms of simplification, better understanding, and increased practicability. For example, minimizing the variability in interpreting the regulations by inspection personnel would better assure the licensee and/or applicant that activities at his facility are in compliance with the regulations.

However, the Subcommittee believes that a revision without a specific technical objective or without a sound scientific basis would be largely counterproductive. The existing Part 20 has been used successfully in the regulatory process for many years. It has adequately protected the health and safety of workers and the general public across a broad spectrum of licensees and has represented a conservative approach to radiation protection. Revision at this time should be considered carefully since public confidence in current radiation standards and the regulatory process are likely to be eroded without justification. In this connection the Subcommittee believes that the recommendations of the leading national and international radiation protection

bodies should be followed, i.e. NCRP, BEIR, ICRP and UNSCEAR. Also, the Subcommittee finds nothing in the recent pronouncements of these scientific groups that would indicate significant change in the biological effects of radiation; on the contrary these groups have refined our knowledge of these effects and reinforced the present state of radiation protection practice.

Because of the state of public perception of radiation at the present time, it would be useful for NRC to hold a public meeting at an appropriate time to explain the rationale for any contemplated revisions to 10 CFR 20. NRC should also not issue final revisions to Part 20 until EPA guidance on occupational radiation is available.

2. Scope of Proposed Revision

There is much concern with the perception that NRC intends to include details in the revision to Part 20 which are beyond the normal scope of regulatory standards. These details appear to include regulatory guides, procedures, performance standards, etc. It is the firm belief of the Subcommittee that such topics are appropriate for regulatory guides and NUREG reports and/or for implementation as license conditions for a licensee's facility rather than in the regulations. The present system has been workable in the past and permits flexibility in the regulatory process by permitting the most effective overall radiation program for a particular facility. Advances in technology can be implemented without changes in the basic regulations. This system should be maintained.

SPECIFIC COMMENTS

Essential Elements of the Radiation Protection Standards

a. Radiological Protection Principles

1. The "Radiological Protection Principles" included are inherent in radiation protection philosophy and used in developing protection standards. It is important to note however, that the linear no-threshold hypothesis is a prudent assumption for setting standards, and for low-LET radiation, the major scientific groups believe the actual risk to be somewhat lower. This key point should be made by the NRC in any revision to Part 20, using language similar to that in ICRP Publication 26. Such a statement would assist in enhancing public perception of radiation risks and promote confidence in the standards.

In using the linear relationship, there is also a need for some type of *de minimus* level of dose or "regulatory threshold" below which dose is not considered to be of health significance in a practical sense.

2. Item (1)

We assume that NRC is referring to the benefit of having the electrical power rather than weighing the benefit of individual exposures.

b. Standards for Individual Occupational Exposure

1. Item (1) Numerical Dose Limits

The Subcommittee is in basic agreement that the ICRP Publication 26 recommendations on external and internal dose

have considerable merit and are appropriate for eventual incorporation into Part 20. However, the NRC should carefully consider the efforts of ICRP and NCRP in developing implementation guidance for applying the recommendations of ICRP Publication 26. There is a need for defining the appropriate mechanism for the summation of internal and external doses as well as the means for measuring internal dose. The significance of internal dose will, of course, vary with the type of nuclear facility involved. The experience at nuclear power plants is that internal exposures are routinely a small fraction of total dose. It would seem appropriate to give these factors recognition and to consider a system whereby internal dose below a certain small fraction of the total dose would not need to be quantified in a routine dose assessment. Inclusion of the internal component in a large portion of cases would not result in an identifiable benefit in improving radiation protection.

2. Item (3)

The present NRC regulations were recently updated to provide better protection for transient workers and these appear to be adequate.

3. Items (4), (5), (6)

It may be appropriate to include this information in the standards providing they are based on NCRP, ICRP and EPA guidance. However, the Subcommittee believes that

limits for lifesaving purposes should not be established and supports the recommendation of NCRP Report No. 39 in this regard. Better guidance on this subject rather than the inflexibility of a dose limit would be helpful.

It is important for the regulations to contain provisions for special exposures since exposures above 10 CFR 20 limits by the licensee resulting from unusual circumstances are contrary to the regulations as they are presently written.

c. Standards for Exposures of the General Public

1. NRC should be certain that guidance contained in regulations such as 40 CFR 190 and Appendix I to 10 CFR 50 are used when developing revisions to this section. Any reporting requirements associated with 40 CFR 190 should be coordinated between NRC and EPA to minimize duplication.

2. Item (4)

Siting considerations are inappropriate for Part 20. For facilities other than nuclear power plants, regulations such as those in 10 CFR 100 could be developed.

3. Items (6), (7), (8)

Limits of contamination for the release of materials for unrestricted use, limits for burial of radioactive waste in other than licensed burial grounds, and contamination limits for disposal of material as non-radioactive waste are appropriate topics to be considered and their development is encouraged. However, the NRC should carefully consider the portion of the regulations where they would be included since there may be sections other than Part 20 that are more suitable.

d. Requirements for a Radiation Protection Program

1. This subject would appear to be more appropriate for a regulatory guide rather than in a regulation. The ability and/or incentive to use innovative approaches in radiological protection programs should be maintained. Any attempted incorporation of these requirements into the regulations should be strictly limited to the specific criteria or objectives necessary to regulate the industry and should be kept to a minimum. Those elements pertaining to implementation should be excluded from the regulations.

AREAS IN PART 20 THAT NEED IMPROVEMENT

a. Radiological Protection Principles

1. Item (2)

The Subcommittee does not believe that it is appropriate or necessary to establish quantitative ALARA guidelines since ALARA should be maintained as an objective within applicable standards and not as a limit in itself. A similar view was stated by the Nuclear Regulatory Commission within the past two years when it indicated a preference to maintain occupational ALARA through amendments requiring licensees to develop programs to be approved by the NRC Staff. The Subcommittee fully supports strengthening the ALARA concept while maintaining the present system of individual dose limits. In this connection, numerous industry studies have been done or are underway by AIF and others to assist in improving the ALARA concept. Copies of these studies are provided to NRC Staff as they are completed.

In this connection, comments on a Staff draft plan for implementing Regulatory Guide 8.8 at operating nuclear power plants were provided to the Staff on December 27, 1979. This draft plan appeared to be a reasonable approach to implementating ALARA programs.

b. Standards for Individual Occupational Exposures

1. Item (1)

Comments on the use of effective dose equivalents and dose limitations for combined internal and external exposures were presented above. It should be emphasized that the NRC should assure that unnecessary efforts are not expended to measure internal exposures that may not be significant.

The NRC cites a hypothetical example where Part 20 permits a worker to receive a total of 17 rem of combined internal and external dose to the whole body in a single year. The Subcommittee would like to indicate that such a combined dose of this magnitude, while theoretically possible under current regulations, is obviously not a general practice and would occur only rarely, if at all.

2. Item (4)

This item suggests that "special provisions to limit collective doses should be considered." The Subcommittee does not believe that collective dose limits are an appropriate mechanism for achieving ALARA. There are a number of

reasons for this position: (a) doses are variable from year to year depending upon the nature of maintenance required, refuelings, etc.; (b) collective dose limits would of necessity be arbitrary since there is no known technical or scientific basis for such limits; (c) such a system would result in a so-called "grading" of the various plants regardless of the reasons for variations in collective doses; and (d) collective dose limits would not include social considerations.

As stated previously, there are numerous industry programs underway to achieve ALARA, including research to reduce the principal sources of in-plant exposure through new technology. It has been pointed out that if the dose for each individual at a nuclear facility were maintained ALARA then the summation of doses in person-rem would also be ALARA.

3. Items (3), (6)

Comments on controls for transient workers were provided above.

c. Standards for Exposure of the General Public

1. Item (1)

As stated earlier, the applicable parts of 40 CFR 190 and Appendix I of 10 CFR 50 should be incorporated.

2. Item (5)

If standards for environmental monitoring are included in Part 20 they should be limited to broad guidance. Specific

requirements should be the subject of the particular license conditions and type facility involved.

d. Requirements for a Radiation Protection Program

Detailed program requirements are not appropriate for regulations. Criteria or objectives for such programs should be left to regulatory guide and license requirements.

e. Reporting Requirements

1. The reporting of routine internal exposures should be closely coordinated with the need to measure extremely low levels of internal exposures. Where they are required, NRC should provide detailed procedures for the dose determination and reporting to maintain uniformity among licensees.

2. Item (2)

Sealed radiation sources would appear to be more appropriately covered in 10 CFR 30.

f. Miscellaneous

1. Item (1)

SI units should not be used in the regulatory program unless used as secondary units and appear in parenthesis immediately following the standard units. After many years, the public and radiation workers are beginning to understand the commonly used units such as mrems and curies. To change units at this particular time would only promote more uncertainty and confusion. The SI units have also not received general acceptance in the U. S. by professional radiation protection personnel.

2. Item (2)

Performance standards for health physics measurements are not appropriate for regulations and would be more suitable for a regulatory guide or NUREG document.

3. Item (3)

The Subcommittee agrees that the technical basis for numerical limits should be readily identifiable, and this information should be foot-noted in the regulations for all values listed.