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Westinghouse
Electric Corporation

Water Reactor
Divisions

Nuclear Technology Division

Box 355
Pittsburgh Pennsylvania 15230

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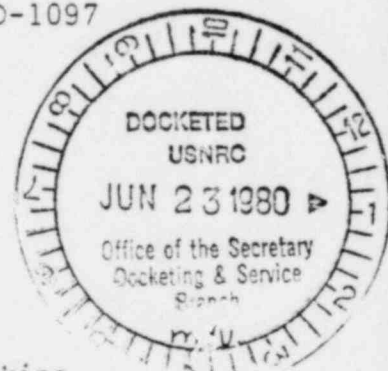
WRD-1097

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

Attention: Docketing and Service Branch

Dear Mr. Chilk:

Subject: Response to NRC Advanced Notice of Proposed Rulemaking
10CFR20-45 Fed. Reg. 18023



In response to the Commission's request for comment on the "Advanced Notice of Proposed Rulemaking; Standards for Protection Against Radiation" (45 Fed. Reg. 18023), Westinghouse Electric Corporation takes this opportunity to present our evaluations, judgements and comments which take advantage of our diversity of experience and responsibilities in radiation protection. Westinghouse Electric is a designer of nuclear steam supply systems which are operated by electric utilities and also provides servicing for our nuclear equipment. Westinghouse holds a variety of licenses under NRC authority at many facilities throughout the United States including Radiographic, By-Product Material, Special Nuclear Material, Source Grade Material, Sealed Source and Reactor licenses. In preparing our response to the Commission's invitation for comment, we have called upon persons knowledgeable in all of our activities covered by Title 10 of the code of Federal Regulations.

Our detailed comments and suggestions are given in the attachment to this letter. We emphasize that we believe radiation protection to be a significant responsibility of each holder of an NRC license. We further believe that the responsibility for radiation protection involving both workers and the general public is most efficiently discharged when sufficient latitude is permitted by regulations to tailor radiation protection to the particular characteristics of each licensee's facility. We, therefore, urge the Commission to consider regulatory criteria and guidance which specifies the basic elements, principles and bases for radiation protection while permitting sufficient freedom for developing the means for implementing the protection criteria in each individual license authorized and approved by the

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Commission. We would also urge the Commission to consider radiation protection as a dynamic process wherein advances in technology, management and experience can significantly contribute to radiation protection.

We would be happy to discuss further any of our comments with you should you so desire.

Very truly yours,

J. J. Taylor, General Manager
Water Reactors Division

RJL:wpc
Attachment

Comments in Response to NRC Advance Notice of Proposed
Rulemaking - 10CFR Part 20 (45 Fed. Reg. 18023)

Westinghouse believes that Part 20 is both a proven and an effective regulation in its present form. While we are aware of radiation protection provisions which need to be revised or added to the present Part 20 regulation, we do not feel that a major revision to the regulation, as proposed in 45FR18023, is warranted. The present 10CFR Part 20 is the product of over twenty years of experience of providing regulatory guidance on basic radiation protection principles. During those twenty years numerous changes have been made to the regulator to reflect state-of-the-art radiation protection principles and concepts. We do not believe that there is sufficient evidence to support a move to undertake wholesale revisions to a proven document. We believe that an orderly upgrading of the present Part 20 regulations to reflect the state-of-the-art in radiation protection is warranted. We would support the Commission's attempts in this direction. The remainder of our comments reflect those areas of the present regulation which we feel may be candidates for upgrading. In drafting these comments, we have followed the format used by the Commission in their notice of intent published in 45FR18023.

I. GENERAL COMMENTS ON PROPOSED NOTICE TO REVISE 10CFR20

We are deeply concerned with what are perceived to be the Commission's intentions to include in the major revision to 10CFR Part 20 details which go beyond protection standards. The Commission is apparently inclined to go beyond radiation protection standards and criteria by including implementation guidance in the proposed regulation. Several examples of implementation guidance are:

- Performance standards (accuracy and reliability) for health physics measurements.
- The establishment of quantitative ALARA guidelines for occupational exposure.
- Special provisions for limiting collective occupational exposures.

- Procedures for responding to emergency situations.
- Procedures for radiation protection.
- Procedures for transportation of radioactive material.

We believe that these types of implementation guidelines are more appropriate topics for regulatory guides or NUREG reports. Implementation guidance is appropriate material for the license conditions or technical specifications for each licensee's individual facilities. In this way, the implementation guidance can be appropriately tailored to each facility in order to establish the most effective overall radiation protection program for a given facility. Also advancements in radiation protection technology can be implemented via changes to facility licenses without the need to initiate lengthy and time consuming changes to the basic radiation protection regulations (i.e. 10CFR Part 20). Material that is presently in regulatory guides such as Regulatory Guide 8.8 is not, for the most part, appropriate material for inclusion in the planned major revision to 10CFR Part 20.

While incorporation of material into the Commission's regulations by reference is permitted by 1CFR Part 51, paragraph 51.8(c), we do not believe that it is appropriate to reference regulatory guides in the Commission's regulations. It is noted that regulatory guides "describe and make available to the public methods acceptable to the NRC Staff of implementing specific parts of the Commission's regulations, to delineate techniques used by the Staff in evaluating specific problems or postulated accidents, or to provide guidance to applicants. Regulatory guides are not substitutes for regulations and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission".* It is our belief that incorporation of regulatory guides

*Quotation taken from the bottom of the first page of regulatory guides issued by the Nuclear Regulatory Commission.

into the regulations circumvents the option stated in each regulatory guide wherein methods other than those presented in the guides are acceptable if they fulfill the intent of the regulatory guidance material.

It is further argued that incorporation by reference only applies to the referenced material as published at the time it is promulgated into the regulation by reference. Any revisions to the referenced material do not automatically become part of the regulations. 1CFR Part 51, paragraph 51.8(c) clearly states that the prescribed rule making procedure must be carried out in order to incorporate the revised material into the regulations. In the area of radiation protection, rapid advances in the state-of-the-art might very well result in outdating of various parts of the regulation where material is incorporated by reference. As in the case of Regulatory Guides 8.9 and 8.15 which are referenced in the present Part 20 regulation, we believe that appropriate radiation protection criteria can be distilled from the regulatory guide material for use in the Commission's regulations. We believe that the same argument can be made for other material which may be under consideration for inclusion in the regulation by reference.

As a third general comment, we urge the Commission to consider the use of language in the redrafting of Part 20 that is precise and not open to varying interpretation. We perceive the Commission's desire to draft regulations which are readily enforceable by the Commission. In like manner, licensees and applicants have a strong desire to have regulations whereby they can be assured that activities conducted at the licensee's facility are in compliance with the regulations. We strongly believe that regulatory requirements must not be susceptible to various interpretations whereby the Commission's inspectors may perceive one intent of the regulation while the licensee perceives another. As such, some of the topics for consideration in the revised Part 20 need to be drafted very carefully to ensure that very specific requirements are conveyed. These areas include many of those delineated under the topic of Radiological Protection Principles in 45FR18024, Column 3.

Finally, we believe that while Part 20 should include basic radiation protection criteria, several facets of radiation protection may be

better handled in other parts of Title 10 of the Commission's regulations where overall regulations for a given activity already exist. These areas include:

- Transportation - Transportation of radioactive materials are presently covered in 10CFR Part 71. Those topics related to radiation protection in transportation should be included in Part 71.
- Siting - Reactor siting is presently covered in Part 100. Consideration should be given to possible expansion of Part 100 to cover all licensed facilities and the inclusion of those radiation protection principles appropriate to siting.
- Informing Individuals of the Risks from Radiation Exposure - Notices, instructions and reports to workers are presently covered in Part 19. Consideration should be given to inclusion of radiation protection related topics in this area in Part 19.

Part 20 could cover these topics simply by reference to the appropriate sections of the other regulations. The advantage to this approach is that all regulatory requirements related to a specific activity (e.g. transportation of radioactive waste) are contained in one section of the regulations. We perceive this as a significant advantage in dealing with regulatory requirements from the licensee's viewpoint.

II. SPECIFIC COMMENTS ON "ESSENTIAL ELEMENTS OF THE RADIATION PROTECTION STANDARDS"

A. Radiological Protection Principles (45FR18024, Column 3)

The basic assumptions used for radiation protection purposes and the basic radiation protection principles derived from those assumptions appear to be excerpted from ICRP Publication 26, "Recommendations of the International Commission on Radiological Protection" (January, 1977). While these are fine and noble general ideals and

suitable for a publication of recommendations such as the ICRP, they are not as easily transformed into regulatory language because they deal, in part, with implementation of regulatory standards. Specific comments and recommendations follow:

1. Radiation Protection Assumptions

The assumptions of linear, no-threshold, dose response and the assumption of response severity independent of dose should be expanded per the ICRP Publication 26 to explain the inherent conservatism in these assumptions. It should also be noted in this section of the proposed regulation that these assumptions are made solely for the purpose of defining numerical dose criteria to insure a conservative approach to radiation protection.

2. Radiation Protection Principles

- a) The principle that any radiation exposure should result in a net positive benefit is a noble ideal. Putting such a concept into a regulation introduces the problem of developing criteria or guidance on the method to show how this principle can be proven for purposes of enforcement of the regulation. The present methodology for cost-benefit analyses, where there is no common unit for comparison (as is the case here), are very complex and quite qualitative. The difficulties are compounded when the person(s) receiving the exposure do not represent the entire population of persons receiving the benefits, as is frequently the case for exposures to radiation. In order to comply fully with the espoused principle, a cost-benefit evaluation would have to be done for each separate activity involving radiation exposure. This would represent a great waste of time and manpower which could more fruitfully be used in real radiation protection problems.

Additionally, inclusion of social factors as a consideration in determining whether occupational radiation exposure is ALARA makes broadly applicable quantitative standards impracticable. Occupational radiation exposure is a necessary consequence of electric generation using nuclear power. The United States Congress has deemed the use of nuclear power, on the balance, to be a socially beneficial activity. Therefore, validating the social desirability of many individual activities within the industry is not necessary.

We believe that this principle can be espoused in the regulation if, and only if, additional regulatory guidance is provided outlining how this principle is satisfied. We believe that the recommendations of the ICRP in their Publication 6, paragraphs 68 through 71 are appropriate to explain this principle. In essence, the principle can be achieved by a system of dose limitation, the main purpose of which is to ensure that no source of exposure is unjustified in relation to its benefits or those of any available alternative, that necessary exposures are kept ALARA, that the dose equivalents received do not exceed certain specified limits and that allowance is made for future development.

- b) The ALARA principle is espoused in the present Part 20 regulation in paragraph 2.01(c). We believe that this paragraph should be transformed verbatim into the new proposed Part 20. In addition, we believe that further amplification of the principle is necessary for operational considerations to define what is reasonably achievable in dose reduction below the recommended limits. The question is whether or not the activity is being performed at a sufficiently low level of collective dose equivalent so that any further reduction in dose does not justify the incremental cost required to accomplish it. In making this determination, the cost-benefit analysis shifts from a consideration of total benefit of

the activity to a change in net benefit that might be involved in requiring the activity to be performed at one level of dose rather than another.

- c) We believe that the radiation protection principle of setting appropriate dose equivalent limits for various selected circumstances is an effective means of controlling radiation exposures.
- d) We agree that persons occupationally exposed to radiation should be informed of the potential risk of that exposure.

B. Standards for Individual Occupational Exposures (45FR18024, Column 3)

1. Numerical dose limits - The numerical dose limits in ICRP Publication 26 should be used in any revision to 10CFR Part 20. This includes the method for defining internal and external exposures using the total body and organ dose equivalent concepts. It is noted that ICRP Publication 26 recommends (paragraph 35) that "it is sufficient to set annual dose equivalent limits and does not recommend any further restrictions either on instantaneous rate or on the rate at which the dose equivalent is accumulated, except in the case of occupational exposure of women of reproductive capacity and pregnant women" (see below).
2. Consideration of limiting exposures of susceptible groups - With regard to consideration of special provisions for limiting exposures to susceptible groups, there are two groups worthy of consideration:
 - a) In order to protect the fetus, in the case of fertile or pregnant women, we feel that the proposed amendments to 10CFR Parts 19 and 20, as published in 40FR799, are adequate. The Commission rationale, as expressed in that document is both reasonable and realistic. Therefore, we believe that the above proposed regulation be used as a basis for this consideration in any new proposed Part 20.

b) For minors, we feel that the present regulations in 10CFR Part 20, paragraph 20.104 are adequate.

3. Controls for transient workers, etc. - Controls for transient workers and moonlighters were recently upgraded in 10CFR Part 20 as published in 44FR32352. We believe that this recent amendment brings radiation protection for transient workers to an acceptable level and no further consideration should be given to this area until sufficient experience under the revised regulations is accumulated.
4. Derived Standards - Some derived standards such as maximum permissible concentrations (MPC), surface contamination levels or annual limits of intake (ALI), are a necessary part of radiation protection standards. Derived standards are related to the basic limits by a defined model of the situation and are intended to reflect the basic limits. The accuracy of the link between derived limits and basic limits depends on the realism of the model used in the derivation. We support a system of derived standards wherein the licensee is given a choice between either the MPC or ALI method depending on the particular conditions of the licensee's facility. Additionally, the licensee should be given the option, in the regulation, of modifying the derived limits for his facility based on actual data (such as particle size, biological half-life, etc.) which enhances the realism of assumptions used in the model to define the derived limits. The regulation should define the means for obtaining approval to use these "equivalent methods". A precedent for this "equivalent methods" approval and use is contained in the EPA regulations implementing the Clean Air Act (see 40CFR53).
5. Provisions for special and emergency exposures - We support the
6. development of numerical limits for planned special exposures. The conditions for consideration of each type of exposure should be explicitly defined. The procedural aspects of reaching a decision regarding the intent to exceed the basic limits should

be such that a timely decision can be reached. We believe that the limits for planned special exposures should be based on the limits recommended in ICRP Publication 26, paragraph 113.

In the case of emergency exposures, especially emergency life-saving exposures, we do not believe that firm numerical limits can be specified in the regulations. In lifesaving situations, on a voluntary basis, doses up to the lower end of the lethal range may be justifiable. In other emergency situations the dose which a person may receive on a voluntary basis should be based on the severity of the emergency taking into account the potential hazards if no action is taken. The regulations regarding doses for emergency situations should be written to permit exposures, on a voluntary basis, in excess of the basic radiation protection standards. In any emergency situation, the regulations should allow the voluntary exposures to be based at the discretion of the responsible radiation protection person employed by the licensee.

We do not understand the need for provisions for overexposure situations. Any intentional exposures in excess of the radiation protection limits should be adequately covered under the categories of planned special exposures or emergency exposures.

In addition, we believe that consideration should be given to developing guidance for controlling subsequent exposures for those persons receiving doses above the radiation protection limits. For example, if an occupationally employed worker receives a planned exposure in excess of the basic radiation protection limits, guidance should be given for controlling exposure to that person in subsequent years to assure that his overall risk is not outside the range of acceptable risks. We support the guidance given in ICRP Publication 26, paragraph 113 wherein exposures up to twice the annual limit are permitted up to five times throughout a lifetime with no additional restrictions placed on subsequent exposures.

C. Standards for Exposures of the General Public (45FR18025, Column 1)

1. Numerical dose limits - Numerical dose limits for members of the general public should remain as they presently are defined in 10CFR20, paragraph 20.105 except that only annual limits should be maintained as recommended in ICRP Publication 26. An additional requirement should be incorporated that exposure be maintained as low as is reasonably achievable. Numerical criteria for ALARA For light-water-cooled reactors are given in 10CFR50, Appendix I and 40CFR190. ALARA criteria for other facilities of the nuclear fuel cycle are given in 40CFR190. These ALARA levels could be incorporated into 10CFR20 by reference. In no case should the values or intent of these regulations (Appendix I to 10CFR50 and 40CFR190) be modified by Part 20. ALARA levels for other facilities not covered by 40CFR190 or 10CFR50 should be defined in either other regulations or on a case-by-case basis and then incorporated into the license conditions.
2. Effluent release limits - Effluent release limits are derived standards. For nuclear fuel cycle facilities, ALARA levels for long-lived effluents are given in 40CFR190 and should be retained by reference. ALARA effluent releases for long-lived effluents from other facilities would either be defined in other regulations or on a case-by-case basis and incorporated into license conditions. There is no need to develop other ALARA levels for effluents in Part 20 since the impact on exposure to the general public is very facility/site dependent. Assuring that doses to the general public are ALARA assures that effluent releases are ALARA.
3. Derived standards - MPC or ALI standards should be defined for air and water pathways only. In order to keep Part 20 from becoming too voluminous or cumbersome, other pathways should be considered by licensees based on generally acceptable models for each pathway. Such evaluations would be utilized in assuring that doses to the general public are within the prescribed regulatory guidance.

Regulatory guidance such as NUREG report could be used to define generally acceptable models for NRC use.

4. Siting considerations - Siting considerations do not belong in 10CFR Part 20. Separate regulations should be developed similar to 10CFR100 for facilities other than nuclear power stations. This could be accomplished by expanding the scope of the Commission's ongoing considerations related to Part 100 (See NUREG 0625).
5. Emergency dose limits - We do not believe that emergency dose limits for members of the general public can be set at this time. The dose limits should be established as part of an integrated ratemaking proceeding covering generic considerations of safety goals, standard safety features, degraded core cooling and emergency planning.

Furthermore emergency dose limits will be a central issue in the generic consideration of the question of operation of reactors in areas of high population density which the Commission announced in its Indian Point order dated May 29, 1980.

Development of these limits should be coordinated with the rulemaking proceedings on emergency planning (44FR 75167).

6. Limits of contamination for unrestricted use - Limits for contamination for the release of material for unrestricted use should be developed expeditiously. A considerable body of work has been performed, including reports by the Department of Energy (DOE), the Atomic Industrial Forum (AIF) and the American Nuclear Society (ANS), to address the appropriate "de minimus" levels of contaminations for release of material for unrestricted use and the results of these studies should be used in defining these levels. This topic should also address limits for soil, silt, structure, etc. contamination for release as unrestricted use (e.g. decommissioning considerations).

7. Limits for radioactive waste burial - We agree that limits for burial of radioactive waste in other than licensed burial grounds should be developed including limits for disposal of material as non-radioactive waste. These are appropriate topics to be considered for radiation protection. However, they might be more appropriately made part of a new overall regulation regarding radioactive waste disposal for all differing facilities. There are sufficient considerations in the development of overall radioactive waste disposal criteria that an entirely new regulation may be warranted. Consideration should be given to this material in the context of the ongoing rule-making proceedings on 10CFR Part 60 "Disposal of High-Level Radioactive Wastes in Geological Repositories; Proposed Licensing Procedures" as published in 44FR70408 and on 10CFR Part 61 "Management and Disposal of Low-Level Wastes by Shallow Land Burial and Alternative Disposal Methods" as published in 43FR9811. We believe that it may be more appropriate to consider the overall aspects of waste disposal in the 10CFR Part 60, 61 context than in 10CFR Part 20. This may involve redirecting the intent of proposed Part 61 to include the total low-level waste criteria or drafting a new Part (e.g. 62) to cover these concerns.

D. Requirements for a Radiation Protection Program (45FR18025, Column 1)

The essential elements of a sound radiation protection program should include:

1. Management controls
2. Training
3. Designation and marking of radiation areas
4. Access controls

5. Personnel monitoring
6. Onsite radiation and contamination monitoring
7. Environmental monitoring
8. Transportation of radioactive material
9. Emergency response
10. Radioactive waste release and disposal
11. ALARA program (occupational and general public)

The proposed revision to Part 20 should set forth the requirement for a radiation protection program which includes the above elements. Due to the diversity of activities covered under licenses subject to 10CFR Part 20, the relative importance of the various elements in relation to one another and the depth to which each element needs to be addressed would vary widely. Implementation topics of each element should be excluded from the regulations and covered in individual, facility specific, license conditions.

We believe that the present Part 20 regulation adequately covers the following elements of a radiation protection program (the paragraph of the present Part 20 section is given in parentheses):

1. Designation and marking of radioactive areas (20.203).
2. Personnel monitoring and surveys (20.201 and 20.202).
3. Transportation (20.205 and 10CFR71).

Unless sufficient new information is available in these areas, the content of these sections should remain unchanged.

New regulatory criteria will have to be developed to cover the other areas of the radiation protection program. We believe that this criteria should emphasize the basic principles and needs of each of these remaining elements.

The area of lifetime accumulative doses should be defined in other areas of a revised 10CFR Part 20, specifically the section dealing with standards for individual occupational radiation exposure. In this area, we believe the guidance presented in ICRP Publication 26 should be used as a basic source of criteria.

E. Record Keeping Requirements

and

F. Reporting Requirements (45FR18025, Column 2)

These areas are adequately covered in the present 10CFR Part 20 regulation. Unless sufficient evidence is available to show that changes are required, the content of the present paragraphs 20.401 through 20.409 should be retained in any revised version.

In revising Part 20, we suggest that the record keeping requirements of paragraph 20.102(b)(2) be moved to 20.401 through 20.409 in order to keep all record keeping requirements in one section of the regulation.

III. COMMENTS ON AREAS IN PART 20 THAT NEED IMPROVEMENT

A. Radiological Protection Principles (45FR18025, Column 3)

1. That the underlying radiation protection principles adopted by the NRC should be presented in terms understandable to the layman is a worth-while and commendable ideal. However, we question whether this may lead to a rather unwieldy section of the

regulation since the primary purpose of the regulations is to present radiation protection principles to be used by those knowledgeable in the field. Radiation workers have a basic understanding of radiation protection as a result of their health physics training prior to employment at a facility. We feel that a better mechanism might be a separate document such as a NUREG report, wherein these radiation protection principles are presented at a layman's level while the regulation itself ascribes to a higher level of knowledge and understanding.

2. We agree that the ALARA principle for occupational and offsite radiation may need strengthening in the Commission's Part 20 regulations. Taking the two separately:

- a) Occupational: We do not believe that it is appropriate, at this time, to assign numerical ALARA guidelines to occupational radiation exposure. The Commission shared this view as late as 1978 in SECY-78-415 by stating that the preferred alternative to maintaining occupational exposure ALARA was to amend various sections of the regulations to require licensees to develop and implement individual occupational ALARA programs. This approach involves development of ALARA programs without numerical criteria for each facility that must be approved by the Commission and would become a license condition for that facility. We endorse this qualitative approach.

- b) Offsite: For LWR and nuclear fuel cycle facilities, ALARA criteria are already in place in the form of 10CFR50 Appendix I and the EPA's 40CFR190. If these numerical criteria are to be absorbed into Part 20, we strongly urge that no changes in either philosophy, intent or numerical criteria be made. ALARA criteria for licensees outside the nuclear fuel cycle should be developed taking into account the characteristics of each class of licensee facility such as was

done for Appendix I to Part 50. The nuclear fuel cycle industry has undergone a painstaking procedure in developing the present numerical guidance which we feel should not be repeated for the present Part 20 revision.

In either case, it is suggested that the regulation admonish practitioners of ALARA that decisions should be made based on collective dose as well as individual dose considerations. Any action to reduce individual doses at the expense of possible increases in collective dose is not in keeping with the ALARA philosophy as recommended in ICRP 26.

D. Standards for Individual Occupational Exposure (45FR18025, Column 2)

1. We agree that consideration should be given to the use of effective dose equivalents and dose limitations for combined internal and external exposures. However, we feel the need for reason to be applied in the actual language of the regulations to assure that extraordinary efforts are not expended to monitor and measure hundredths of rem of internal exposures when external exposures are being monitored in tenths and whole rem. There should be a cutoff point where the contribution of one exposure mode to the total is negligible and need not be monitored and measured. In this way, significant effort would be applied only in areas where warranted.
2. Consideration should be given to an "either-or" system for derived limits (e.g. MPC or ALI). The system to be implemented at a given facility would depend on particular physical characteristics of the facility, its layout and its processes and should be part of the license conditions.
3. We agree that applicable standards for emergency and special conditions should be developed. We urge consideration of the approach taken in ICRP Publication 26 as a basis for the Part 20 numerical standards.

Additionally, we believe that the procedure for evaluation and authorization of such exposures not be made so cumbersome that any benefits to be gained in actual circumstances would be mitigated.

4. Special provisions to limit collective doses should not include numerical guidelines or limits. The prevailing philosophy on maintaining occupational radiation exposures at ALARA levels as amply expressed in the NRC document SECY-78-415 of July 31, 1978 based on design, operational and administrative commitment to the ALARA principles is, we believe still valid. We believe that there are alternative methods of regulating collective doses (that do not involve numerical criteria) that can be effective. Two possible approaches would include:

- a) Annual goal setting - Based on past experience at a particular facility and considering upcoming activities at the facility, an annual collective dose goal could be set. The effectiveness of the ALARA program at the facility could be measured by comparing subsequent collective doses to the goal. At any facility, the annual goal might have to be adjusted periodically to account for unanticipated operational occurrences which result in exposures not planned for in the goal setting activity. These annual goals could be established for the entire facility, for broad categories of operations (e.g. regulatory guide 8.19 table 1 for nuclear power generation facilities) or for specific operations at the facility.
- b) Progressive Improvement - Based on past experience at a particular facility for a given activity, a goal could be set for subsequent similar activities wherein the exposures during subsequent activities would become progressively lower. This type of goal setting activity would have to be

limited to activities contributing greater than some preset fraction of the total annual station exposure in order to be manageable.

We favor an approach for regulating collective doses that does not set one unique "speed limit" but rather relies upon progressive improvement up to the point that it is not economically feasible to gain the next incremental improvement. Due to the diversity of activities covered under licenses covered by 10CFR Part 20 we favor specific details of these provisions be left to the individual license conditions for each facility.

5. Special provisions for limiting exposures to susceptible groups has been the subject of considerable debate over the past several years. We favor the approach taken by the Commission in 40FR799 dated 1/3/75 wherein the Commission proposed to amend its regulations to require notification of the susceptible groups of the risks involved in radiation exposures. We believe further that proper ALARA management at each facility would ensure that special attention is given to identify susceptible individuals.
6. We do not feel that controls for contract workers and transient workers need to be strengthened beyond those steps taken in the recent revision to 10CFR20 in 43FR44827. This change was a result of extensive interchange of philosophy and ideas between the NRC Staff and interested public parties which resulted in substantial upgrading of the regulations in the area of "transient workers". We believe that the transient worker is protected under the present regulations and any additional changes before experience is gained under these new regulations would be unwarranted.

C. Standards for Exposure of the General Public (45FR18025, Column 3)

1. We believe that pathways other than air and water for exposure of the general public should not be considered for all licensees discharging measurable quantities of radioactivity from their facilities. This is adequately covered for nuclear fuel cycle facilities in other parts of the CFR. If incorporation into Part 20 is deemed necessary, the applicable parts of 40CFR190 and 10CFR50 Appendix I should be used in their present form. For other facilities, consideration should be given to the facility, its processes and possible control strategies through an ALARA cost-effectiveness analysis.
2. We do not believe that there exists a need to develop criteria in this area since exposures to the general public are already low. The only possible exception is in the area of emergency or abnormal conditions at the licensee's facility wherein emergency procedures should recognize the need for special consideration for susceptible members of the general population.
3. Same comment as II.b.2 of this letter.
4. We agree that standards should be developed and presented for emergency or abnormal conditions at a licensee's facilities. We recommend consideration of graded projected dose criteria in the regulations which would trigger emergency actions in the vicinity of the facility. The particulars of the emergency actions would be specified in the license conditions based on particulars of the given facility including population groups, local and state agency capabilities, site characteristics and the licensee's capabilities. The above facility particulars are not uniform across the broad range of activities regulated by NRC under Part 20 and thus, facility dependent procedures need to be considered.

5. Standards for environmental monitoring for either routine or accident conditions should be addressed in a broad and general manner in Part 20. The particulars of any monitoring programs should be included in the license conditions for a given facility. This area does not lend itself to development of generic standards due to the diversity of activities licensed by NRC under Part 20.

D. Requirements for a Radiation Protection Program (45FR18025, Column 3)

1. We agree that the need for and the basic elements of a radiation protection program to be implemented at each licensee's facility should be present in Part 20. As expressed in our comments in Section II, we believe that the radiation protection program description and particular elements of the program should be part of the license conditions. The section of Part 20 dealing with this topic should only address the need for the program (i.e. require such a program) and specify the basic elements of such a program without getting into details of each element.

E. Reporting Requirements (45FR18025, Column 3)

1. Reporting of routine internal exposures - We believe that reporting of routine internal exposures should be consistent with the reporting requirements for external exposures. The present reporting requirements for external exposures are in the form of a statistical summary of personnel monitoring information as required by paragraph 20.407, a report of the individuals exposures to radiation as required by paragraph 20.408 and 20.409. We believe that the reporting requirements developed for internal exposures should include provisions similar to external exposures wherein only those above a preset limit need to be considered.

2. We believe that regulations related to reporting of rupture or failure of sealed radiation sources are better handled in the existing framework of the Commission's regulations 10CFR Part 30 through Part 35 and 10CFR Part 40. These regulations govern the licensing and use of by-product materials and source material. Any reporting requirements relative to failure or rupture of these materials should be clearly set forth in the regulations governing licensing and use of such material. While there are radiation protection implications from the failure of sealed sources, we believe that they are adequately covered by other sections of Part 20.

F. Miscellaneous (45FR18025 Column 3)

1. We believe that the primary units used in the revised 10CFR Part 20 should be the traditional units of curies, rads and rem. Conversion formulas should be presented for the SI units in an appendix to Part 20. We do not believe that the SI units have gained sufficient acceptance in the U.S. to warrant their use in NRC regulations at this time.
2. Performance standards (accuracy and reliability) for health physics measurements should not be part of the 10CFR20 regulations. We consider this area to be an implementation activity and, as such, does not belong in the CFR.
3. We agree that the technical basis for numerical limits should be readily identifiable. Too often in the past, regulations have been written based on adequate justification for numerical values and qualitative requirements which subsequently become lost. We suggest that NRC draft a NUREG report to accompany the regulations which details the technical bases for both numerical limits and qualitative requirements in the revised 10CFR20 regulation.