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January 7, 1983

Honorable Nunzio J. Palladino
Chairman
U. S. Nuclear Regulatory Commission
Washington, D. c. 20555

Dear Chairman Palladino:

Subject: Revised Policy Statement and Implementation
Plans on Safety Goals for Nuclear Power
Plants.

Reference: Letter dated 5/18/82 from ANS President Corwin
L. Rickard to the Secretary of the Commission
on Proposed Policy Statement on Safety Goals
for Nuclear Power Plants.

The American Nuclear Society (ANS) responded by the refer-
ence letter to the Nuclear Regulatory Commission (NRC) invitation
for comments on the Proposed Policy Statement on Safety Goals for
Nuclear Power Plants. In the response the ANS indicated its wish to
have the opportunity to further comment on any revisions to the
policy statement and on any implementation plans that the NRC might
prepare. We would like to reiterate the request to comment on any
official NRC publications, and also to take this opportunity to
present our views to the Commission.

1/7..To EDO for Appropriate Action..Cpys to: Chm,Cmrs,OPE,OGC,SECY
83-1280

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In deliberating on policy statement revisions and, even more importantly, on possible implementation plans, the ANS has concluded there is one central overriding issue; how the Safety Goals will be considered and implemented over the next few years while the process is in a trial period. In reaching decisions on this point, it is imperative to accurately appraise the current status of the principal methodology used in evaluating safety goals, probabilistic risk assessment (PRA). The ANS believes that PRA is an extremely powerful tool that in the future will continue to be shown to be useful for both assessing risk and making rational decisions relative to nuclear power plant design and operation with respect to safety. However, it is also necessary to fully appreciate that at the current state of the technology PRA is also a very imperfect tool. Large differences in the results can come from different groups performing the analysis. Uncertainties exist from all of the following: determination of the dominant risk paths; accident phenomenology; the data base characterizing system failure; the treatment of common mode failures and of human factors; and more generally in the various assumptions underlying the PRA analysis.

It is thus crucial that experience be developed in the application of PRA relative to Safety Goals prior to their final acceptance. For this reason, the ANS believes that during a trial period of the next several years, the Safety Goals should be treated in a totally non-binding way. It is not necessary to define now the duration of the trial period but it should probably be in the range of two to five years. The primary objective during the trial period is to gradually move from an initially loosely defined implementation plan, with little prescriptive guidance, to a well defined process to be established at the end of the trial process. The gradual evolution from a loosely defined to a well defined process should be done with the major coordination coming from NRC. The experience base would come in a trial and error way from various PRA applications, insights, and comparisons against the Safety Goals. During the trial period no PRAs should be required to be performed solely to meet Safety Goal requirements. Nor should any PRA result exceeding the risk stated in the proposed Safety Goals be taken as a mandatory need for any action. No decision should be mandatory on the basis of the numerical results related to PRA comparison with Safety Goals. The key thrust is to make the next several years a non-binding trial period relative to Safety Goals during which time an implementation process would become progressively more precisely established.

If this approach is followed, the initial implementation details and plans will be expected to change during the trial period since the key objective over the next several years is to gain experience with the process. Clarification of terms and concepts used in the Safety Goals will likely represent the bulk of the initial implementation plan.

We should note that our recommendation on a near term focus based on a trial period is fully consistent with our May 18, 1982 response in which we said, "Because of the current uncertainty in some facets of risk analysis, we believe that a good case can be made that near-term applications related to safety goals should be focussed on general studies aimed at testing the quality of the regulatory fabric as opposed to specific applications on individual plants."

In addition to the central issue addressed above there are several other issues on which we would like to make the following comments:

1. With regard to establishing the prompt fatality risk at the immediate site boundary at a value of one percent of normal accident risks, instead of one-tenth of one percent, the ANS believes this is a desirable direction and is in line with our original comments.
2. As to a value of one thousand dollars per man-rem averted in the ALARA principle, our original recommendation had been one hundred dollars but we also thought it not a crucial matter.
3. Generally, the ANS believes that in the entire safety goal approach there has been an excessive focus on core melt. We concurred with the 10^{-4} per reactor year value in our original comments. It has been suggested that a value above 10^{-3} be one that requires immediate action. In line with our previous central point we recommend that during the trial period no such immediate action be required because of the 10^{-3} value being exceeded. A case-by-case look at affected plants and an appropriate decision should be reached on other than a calculated value of core melt probability.

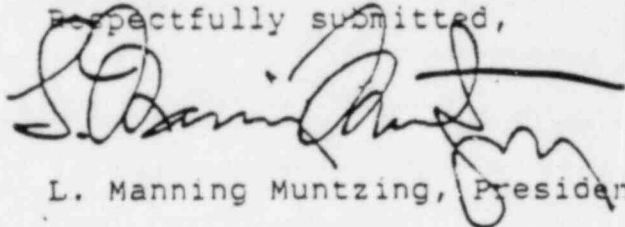
4. With regard to routine emissions being included in the Safety Goals, we have no strong views on the subject but we would prefer deletion of this component in order to simplify the application of Safety Goals. In any event, it is clear that an inclusion of routine emissions would not materially affect the ability of plants to meet recommended Safety Goals.
5. We disagree with the inclination to disaggregate the various components of risk and apply individual requirements on them, as opposed to only requirements on total risk. For example, the requirement that 10^{-4} per year reactor is the acceptable core melt value but in addition the requirement that no individual contributor to core melt be larger than 10^{-5} per reactor year represent an undesirable disaggregation. Similarly, risk requirements on individual systems and components represent an undesirable disaggregation.
6. The ANS wishes to reemphasize strongly our original comment that appropriate factors be applied between maximum individual risk and average societal risk. We believe a large ratio is applicable in comparing maximum risk, say, at one mile and average risk over a 50 mile radius. If this is not fully factored into the specification of Safety Goals, it can result in a highly misleading interpretation by the public as to the actual risk to which society is exposed.
7. Returning to the central issue, the ANS believes that any near term implementation of Safety Goals on other than a non-binding trial basis would require a proven methodology beyond that currently available for PRAs. There is little basis now on which to specify an approach which could be argued represents a sufficiently proven prescription. Therefore, it would be premature now to specify a highly prescriptive approach. This reinforces the argument against implementing Safety Goals now in any way other than on a non-binding trial basis.

The ANS hopes these comments will be useful to the Commission in its deliberations. We ask that there be further

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opportunity to comment on any official releases by the Commission on either the revised policy statement or on implementation plans. We continue to be willing to discuss our views with appropriate NRC representatives on these topics as might be desired.

Respectfully submitted,



L. Manning Muntzing, President

LMM:evm

cc: Commissioner James K. Asselstine
Commissioner Thomas M. Roberts
Commissioner John F. Ahearne
Commissioner Victor Gilinsky
Mr. William J. Dircks