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

Dear Dr. Palladino:

SUBJECT: ACRS COMMENTS ON PROPOSED SAFETY GOAL POLICY

During its 311th meeting, March 13-15, 1986, the Advisory Committee on Reactor Safeguards met with representatives of the Office of the Executive Director for Operations and continued its review of the issues associated with the issuance of the NRC Safety Goal Policy. The Committee last reported on this matter in a letter to you dated July 17, 1985. Since July 1985, Subcommittee meetings were held on this subject on November 6, 1985, December 4, 1985, and March 12, 1986. This matter was also discussed during the December 5-7, 1985 ACRS meeting. The memorandum from V. Stello to the Commission, dated February 14, 1986, on Safety Goal Policy served as a focal point for this part of our review. We also had the benefit of comments from several ACRS consultants.

A large number of complex issues, both general and specific, need to be addressed in the development of a safety goal policy. In this report, we will comment on only some aspects of the overall subject. Our comments are listed below:

1. We favor early Commission action to adopt a form of safety goal policy. However, we have a number of comments concerning the particulars of the safety goal policy currently being proposed.
2. The safety goal policy should include the two qualitative goals of the general form recommended by the EDO. However, we are divided on whether the second qualitative safety goal should be modified to say that the societal risks to life and health from nuclear power plant operation should be less than the risks of generating electricity by viable competing technologies (rather than "comparable to or less than," as stated in the 1983 Safety Goal Policy).
3. Further, the safety goal policy statement should include explicitly the two quantitative health effect objectives. We disagree with the NRC Staff that these quantitative objectives should not appear as discrete statements of expectation in the policy statement.
4. We do not recommend including in the policy a separate statement to the effect that there should be a goal for making the likelihood of core melt small in the population of existing reactors during their lifetime.
5. We have considerable concern that quantitative cost-benefit analysis will become a major factor, if not the major factor, in decision making on safety issues, rather than being treated as only one attribute of the judgmental process.
6. We fail to see appropriate guidance for including uncertainties in decision making. The calculation of best estimate rather than con-

servative values, together with a full display of uncertainties, assumptions, and omissions, will be in the right direction. How to factor this highly uncertain information into specific decisions remains to be determined.

7. We are opposed to the use of the quantitative matrix defined in the memorandum dated February 14, 1986 by V. Stello. Some members favor its use on a trial basis for a few years as one attribute in decision making. However, others think it is too complex. Some object to it because of inclusion of averted on-site costs. Still others think the matrix idea should be replaced by a cost-benefit approach which includes all costs. All agree, however, that cost-benefit should be only one of the several inputs into decision making.
8. In the ACRS report of July 17, 1985, the Committee said, "We believe that the Commission should state that a mean-core-melt frequency of not more than 10 per reactor year is an NRC objective for all but a few small, existing nuclear plants, and that, keeping in mind the considerable uncertainties, prudence and judgment will tend to take priority over benefit-cost analysis in working toward this goal." We reiterate this position.
9. In a severe accident, it is the releases from containment which constitute the risk to the health and safety of the public. Thus, risk cannot be assessed without a judgment on containment performance. We reiterate our recommendations to develop a containment performance objective.
10. There is a need for both the Committee and the NRC Staff to develop guidance for implementation of the safety goals. Since plant maintenance, operations, and management will have a significant impact on risk, this effort should include the development of "indicators of performance" through which the acceptability of such activities can be judged.

We expect to develop additional recommendations regarding this matter during our April meeting.

Additional comments by ACRS Members William Kerr, J. Carson Mark, and by Harold W. Lewis are presented below.

Sincerely,

David A. Ward
Chairman

Additional Comments by ACRS Members William Kerr and J. Carson Mark

We do not favor publication of guidance which implies that it is possible to demonstrate compliance with a goal of risk for prompt fatalities of 0.1 percent of the sum of prompt fatality risks from other accidents, or of risk from cancer fatality of 0.1 percent of the sum of cancer fatality risks from other causes.

Additional Comments by ACRS Member Harold W. Lewis

While I believe that there has been improvement in the drafts of a proposed Commission safety goal, I also believe that the current version remains so flawed as to not warrant issuance. Many of my reasons were detailed in my additional comments to the ACRS letters of June 9, 1982 and July 17, 1985, which I believe to still be valid, and I will only add a few remarks here. Nothing I say should be construed as opposition to the issuance of a safety goal -- I seek only higher quality.

I believe the proposed qualitative goal relating to the relative risks of other means of generating electricity is unsound, because it is based entirely on risk, and there is more at stake than risk. The American people might well prefer a slightly riskier alternative (if it existed) which was both free and kind to the environment.

I do not believe that there should be an individual goal, but that any few individuals who might have to bear a burden, in the common interest, ought to be suitably compensated.

There are too many slippery targets in the proposed goals and their implementation plan. Most have forgotten the arbitrary - some might say capricious - origin of the historic ALARA number of \$1000 per man-rem, but its use pervades the implementation plan for the safety goal. The following table is relevant:

| | 1960 | 1970 | 1980 |
|--------------------------------|-------|-------|-------|
| cancer death rate (male) | 162.5 | 182.1 | 205.3 |
| cancer death rate (female) | 136.4 | 144.4 | 163.6 |
| value of the dollar (1967=1.0) | 1.127 | 0.860 | 0.406 |

*death rates per 100,000
population per year

Surely, the Commission cannot intend that its vigilance will be allowed to relax as the natural cancer death rate increases, yet the goal says so. Surely, the value of a human life isn't decreasing at the rate shown, yet the Commission plans to say so. Both of these problems can be circumvented by a declarative goal, as recommended in my dissent of last year, and using these numbers to put the current meaning of the goal into context.

I do not believe that on-site costs other than radiological costs should be included, for familiar reasons.

The NRC Staff supports the requirement that no one source or sequence be much larger than the others as a contributor to risk by saying that that will help to reduce uncertainty. I am unable to understand that argument, and believe it to be incorrect.

I do not support a core-melt probability goal as a surrogate for public risk. It is not. It could be used as a regulatory tool, but should not be a Commission goal.

The Committee itself finds the proposed matrix approach to regulation unac-

ceptable. So do I.

Finally, to repeat, I support the early issuance of an arbitrary quantitative safety goal along the lines suggested earlier. It is the extra baggage carried by this proposal that I find disturbing.

Reference:

Memo dated February 14, 1986 from Victor Stello, Jr., Acting Executive Director for Operations for the Commission, Subject: Safety Goal Policy, with enclosed Summary Paper on Safety Goals

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