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October 27, 1980

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ADVISORY COMMITTEE ON  
REACTOR SAFEGUARDS, U.S.N.R.C.

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Milton Plesset, Chairman, and Members  
Advisory Committee on Reactor Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Gentlemen:

I appeared before the ACRS Subcommittee on Waste Management on October 3 to suggest issues upon which the Subcommittee should focus its attention. The Committee was briefed on the same day by the NRC staff on its work on waste disposal criteria and by DOE on its waste program. No other members of the public appeared. Because the opinions of the ACRS on the subject may be viewed as important by the Commission, in the context of the critical Waste Confidence Proceeding, I feel it necessary to respond to certain criticisms of NRDC's submissions in that proceeding which were made by Dade Moeller at the ACRS session.

With regard to his specific criticisms, Dade first took issue with our use of BEIR I data on radiation risks, at least implying that BEIR III figures were purposely excluded because they would not have "served [our] purposes."

There are four good reasons for using BEIR I rather than BEIR III data. First, a final version of the BEIR III report was unobtainable at the time our comments were drafted, despite our efforts to obtain a copy. Second, of the figures available, those from BEIR I are generally considered to be easier to deal with. Third, BEIR III is still used by others, including EPA (cf. Enclosure 1, particularly p. 41). EPA, in fact, argues against using BEIR III because it has not been evaluated outside of the NAS. Last and most important, it is our view that the BEIR I estimates are preferred over the estimates made by the majority in BEIR III.

Dade is certainly aware of the ongoing scientific controversy in this area; it is wrong to suggest that BEIR III is the dispositive authority in this matter. On the contrary, it has brought part of the controversy rather clearly out into public awareness. Although Dade may prefer the majority view in BEIR III, NRDC does not.

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ATTACHMENT A

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Next, Dade objected to our description of the Commission's action on WASH-1400. He stated: "They declined to endorse the executive summary of the report, not the complete report." If Mr. Moeller was implying that the Commission accepted the remainder of WASH-1400, he was incorrect. To be exact, the Commission stated the following on January 18, 1979:

**Executive Summary:** The Commission withdraws any explicit or implicit past endorsement of the Executive Summary.

**The Peer Review Process:** The Commission agrees that the peer review process followed in publishing WASH-1400 was inadequate and that proper peer review is fundamental to making sound, technical decisions. The Commission will take whatever corrective action is necessary to assure that effective peer review is an integral feature of the NRC's risk assessment program.

**Accident Probabilities:** The Commission accepts the Review Group Report's conclusion that absolute values of the risks presented by WASH-1400 should not be used uncritically either in the regulatory process or for public policy purposes and has taken and will continue to take steps to assure that any such use in the past will be corrected as appropriate. In particular, in light of the Review Group conclusions on accident probabilities, the Commission does not regard as reliable the Reactor Safety Study's numerical estimate of the overall risk of reactor accident. [Emphasis supplied.]

**Communication with the Congress and the Public:** Commission correspondence and statements involving WASH-1400 are being reviewed and corrective action as necessary will be taken.

NRC Statement on Risk Assessment and the Reactor Safety Study Report (WASH-1400) in Light of the Risk Assessment Review Group Report, Jan. 18, 1979.

While we would agree that the Executive Summary was most clearly and completely rejected, it is unquestionable that the overall risk estimates produced by WASH-1400 were also rejected, which is the point relevant to our submission. Considering the

enormous propaganda value of those risk estimates and the widespread and deceptive use to which they were put by both the government and the industry after (and in some cases before) the publication of WASH-1400, we feel fully justified in using the word "repudiated" to refer to the Commission's action. It should also be noted that NRDC cited the Commission's Policy Statement to enable the reader to judge for himself.

Third, Dade cited NRDC's comments on the problems with borosilicate glasses and criticized us for failing to mention the "considerable controversy" behind the NAS report referred to. I don't quite understand Dade's criticism here, for, as can be seen clearly from Enclosure 2, pp. 54-57, it is precisely this controversy over the wisdom of using borosilicate glass that we were trying to bring out in our Cross-Statement.

Fourth, Dade mentioned NRDC's discussion on the industry's proposal to judge a repository acceptable if it could in theory be constructed so as to pose a radiation hazard no greater than the loss associated with exposures comparable to variations in natural background radiation. If you read our testimony (pp. 16-23 of our Cross-Statement attached as Enclosure 2), Dade's flippant comment that "we really are in tough shape if we are all suffering hazards or undergoing hazards from natural background" is inappropriate -- in fact, outrageous. I know this doesn't represent the sum of his thoughts on the subject, which is far from a simple one, either philosophically, ethically, or scientifically. Rather than reiterate NRDC's position, we suggest that the members read pages 16-23 of our Cross-Statement (Enclosure 2). You will note also that NRDC supports the alternative concept of judging the acceptability of a repository with respect to the risks posed by the natural ore from which uranium is mined, a position also supported by an ANSI group developing a waste disposal standard.

Fifth, Dade criticized NRDC for taking the position that DOE's comments should have addressed the basic approach reflected in the draft NRC criteria for repositories, on the grounds that DOE did not know of the NRC criteria at the time its statement was prepared. I find this argument remarkable in view of the fact that NRC has been working on its criteria for some considerable time and has been through at least nine or ten drafts. Does DOE contend that it had not been consulted and was "surprised" by the approach taken by NRC? We know this is not the case. Moreover, DOE was fully informed of NRC's draft criteria by the time it prepared its Cross-Statement, September 5, 1980. Rather than address the fundamental difference in approach between DOE and NRC, which had been raised by a number of parties, DOE chose to make the singularly inappropriate and rather baffling retort:

The Department in this proceeding is not applying for authority to construct or operate a particular disposal or storage facility. The Commission is conducting this rulemaking to make a generic judgment that is largely legislative in nature.

Cross-Statement of the U.S. Department of Energy, p. I-9.

The fact that DOE is not applying for a license does not, of course, vitiate the fact that those who do will be required to meet NRC criteria and that, therefore, both the approach taken by the criteria and the ability of applicants to meet them are central issues in the Waste Confidence Proceeding. If DOE chooses to avoid these issues, its submissions must surely be judged accordingly.

Finally, Dade criticized NRDC's comments on the industry's hazards index approach. He claims we have "cited examples where . . . the MPCs . . . should be lowered," but not "the ICRP recommendations which might even increase the MPCs, because again, that would not support their position."

First, I note that the NRC Staff, the American Physical Society's Nuclear Fuel Cycle Study Group, the ACRS Subcommittee on Waste Management, and perhaps even Dade apparently share NRDC's view that the hazards index approach has too many pitfalls to be reliably used as a basis for determining the risks associated with nuclear waste disposal or to use it as a basis for licensing. Second, NRDC addressed four separate arguments against the use of the hazards index approach; only one of these related to the uncertainties in the MPC values. And with regard to the MPC Dade apparently agrees with us that they are highly uncertain. Thus, the only issue here is whether we should have cited additional examples that "do not support [our] position, specifically the ICRP recommendations." To this, let me just say that to support our argument that the MPCs had large uncertainties I decided to cite as an example only one isotope, Pu-239, and I cited two examples from the literature. Given that virtually every competent scientist in the field surely agrees with the conclusion, I saw little value to beating this dead horse by citing other examples.

Now, Dade thinks I should have cited the ICRP. Perhaps I should have -- it would have provided further supporting evidence to the point that the MPCs are highly uncertain. Whereas neither Dade nor I nor anyone else to my knowledge has revised the Hazards Index analysis using the model assumptions most recently recommended by the ICRP, I would venture that their use would result in the spent fuel/uranium ore crossover

(the time at which the hazards are equivalent) being extended, not reduced as Dade suggests. Finally, Dade should have directed this criticism more appropriately at the utility group that was proposing the hazards index approach, or even the NRC Staff which included the hazards index data in its ACRS presentation.

This concludes my specific responses to Mr. Moeller's criticisms. I would add that I was astonished by the tone of Mr. Moeller's ad hominem attack on NRDC and by his apparent desire not to engage in useful discussion but rather to broadly discredit NRDC and its work. Any fair reading of the filings in the Waste Confidence Proceeding thus far will show that our positions are thoughtful and well-supported. We urge all of the members to read those filings.

This experience has convinced me that the ACRS in its present form is not fulfilling the function envisioned by Congress. Rather than providing independent, unbiased, technical review, it has become an apologist for the nuclear industry. I will cite just two examples. First, the Committee's treatment of the three resigned GE nuclear engineers during their first appearance before it -- Messrs. Minor, Bridenbaugh, and Hubbard -- was shocking. Rather than attempt to explore the merits of their concerns, the ACRS seemed motivated by an intent to personally discredit these men in order to justify dismissing what they had to say. The proceedings were scarcely impartial.

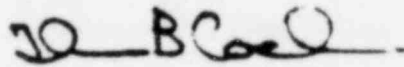
Second, I would mention the Committee's treatment of the post-TMI hydrogen control issue in the context of the Sequoyah license. The Committee noted that for events involving more than some 30% oxidation of the zirconium cladding (about equal to or less than the magnitude at TMI-2) containment integrity could not be assured without additional hydrogen control measures. It also pointed out that, even for smaller events not directly threatening containment integrity, it has not been demonstrated that safety equipment could survive. However, the Committee took the position that there was "no need" to delay the issuance of a full power operating license for Sequoyah. No rationale was provided for this position.

NRDC has reluctantly concluded that, as presently constituted, the ACRS lacks the independence and detachment to function as an impartial reviewer. Until its makeup is changed to broaden the range of its membership and its orientation redirected to safety, we can see that it serves very little useful purpose.

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Until serious efforts are taken to rectify these problems, I don't feel that I would be serving the interests of the Commission or the public by further appearances before the ACRS.

Sincerely,

A handwritten signature in dark ink, appearing to read 'T B Cochran', with a horizontal line extending to the right.

Thomas B. Cochran

cc: Governor Bruce Babbitt  
NRC Commissioners