

D890509

The Honorable Lando W. Zech, Jr.
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Zech:

SUBJECT: NUREG-1150, "SEVERE ACCIDENT RISKS: AN ASSESSMENT FOR FIVE U.S. NUCLEAR POWER PLANTS"

During the 349th meeting of the Advisory Committee on Reactor Safeguards, May 3-6, 1989, we discussed the second draft of NUREG-1150, "Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants," with members of the staff. We also had the benefit of the documents referenced.

Although we have not had an opportunity for more than a brief look at this second draft, we have been asked to recommend uses to which it could be put before the completion of the peer review as organized by the NRC staff. At this time, on the basis of a cursory examination, we can recommend only that, if its conclusions are used, they should be examined very carefully in light of the criticisms leveled at the initial draft. For the most part, criticism of the initial draft focused on what has come to be called the Level II portion of the probabilistic risk assessments (PRAs) discussed in the report. It would appear on this basis that prior to peer review of this second draft, information and insights that may come from the Level I portion of the report can be given more credence than those from other parts of the PRAs. We observe, however, that the core-damage frequencies reported do not take into account a number of external accident initiators that in other contemporary PRAs have appeared as major contributors to the risk calculated.

Of some interest to us, in connection with staff usage, are comments from some segments of the staff that might be expected to use either the results or the insights derived from the report. During the past month we have observed the following:

During our April 6-8, 1989 meeting, the Director of the Office of Nuclear Reactor Regulation reported on a major effort being considered to reduce the risk that he believes is associated with the interfacing-systems LOCA. We observed that the draft NUREG-1150 report did not identify this as a major risk contributor. He responded that he was skeptical of the results of PRAs. He felt that, if his current concerns are borne out by further investigation, this issue is important enough that it should be resolved before the individual plant examination (IPE) program is completed.

Also during our April 6-8, 1989 meeting, we discussed with members of the staff from the Office of Nuclear Regulatory Research the performance of motor-operated valves (MOVs) in nuclear power plants. They presented a study, performed at Brookhaven National Laboratory, which they are using as partial justification for requiring a major program of testing, maintenance, and repair of MOVs in operating plants. The report concludes that the core-

damage frequency for boiling water reactors (BWRs), taking into account what they now believe to be the performance of MOVs, is more than an order of magnitude greater than the core-damage frequency for BWRs reported in the draft NUREG-1150. On the basis of the staff's conclusion regarding this matter, they are recommending an extensive program which they believe will enhance valve performance. They consider this problem so important that it too should not wait for the IPE program. They are convinced that NUREG-1150 does not represent properly what they view as a major risk contributor.

We conclude from these experiences that it may be worthwhile, in the review process, for those responsible for NUREG-1150 to solicit comments from other elements of the staff which might be expected to use the results of the report.

In summary, on the basis of a very preliminary review, the insights and the results of the second draft of NUREG-1150 should be used with considerable caution before the planned peer review has been concluded. We expect that more credence might be given to the Level I parts of the PRAs than to Levels II and III. However, we repeat that some of the Level I results have already been called into question by other parts of the staff.

Sincerely,

Forrest J. Remick
Chairman

References:

1. U.S. Nuclear Regulatory Commission, NUREG-1150, "Reactor Risk Reference Document," Volumes 1, 2 and 3, Draft issued for comment, dated February 1987
2. U.S. Nuclear Regulatory Commission, NUREG-1150, "Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants," Volumes 1 and 2 (Second Draft for Peer Review), dated April 17, 1989 (Pre Decisional)
3. Memorandum dated April 18, 1989, for the Commissioners from V. Stello, Jr., Executive Director for Operations, SECY-89-121, Subject: Transmittal of NUREG-1150, Second Draft for Peer Review
4. Memorandum dated February 17, 1989, for the Commissioners from V. Stello, Jr., Executive Director for Operations, SECY-89-058, Subject: Status Report and Preliminary Results of NUREG-1150
5. Memorandum dated December 8, 1988, for the Commissioners from V. Stello, Jr., Executive Director for Operations, SECY-88-337, Subject: Plans for Future Review of NUREG-1150

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