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President

LIABILITY ENGINEERING DEPARTMENT
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The Honorable Joseph M. Hendrie
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20202

Dear Dr. Hendrie:

We are confident that the Nuclear Regulatory Commission is actively engaged both generically and specifically to utilize information arising from the analysis of the recent nuclear emergency which occurred at Three Mile Island in order to achieve the maximum safety benefit. It is our view that sufficient incentive now exists to greatly expand the scope of the Accident Analysis section of the FSAR (Section 15).

For each nuclear facility, the existing set of analyzed accidents should be more intensively developed to include an expanded number of analyzed cases simulated for longer time duration, utilizing augmented simulation capability. Increased latitude of assumption and improved methodology incorporated into the analyzed transient sequences would provide substantial safety advantage in that there would be:

1. addition analysis of off-normal system behavior information in order to point the way to possible design modification to better indicate, accommodate and mitigate the off-normal conditions;
2. additional operator training information to be integrated into formalized reactor operator training programs which will better equip operators to recognize and otherwise cope with such conditions as may be calculated to arise under 1 above;
3. longer term simulation of analyzed transients to permit and assist the development of more extensively verified emergency and plant recovery procedures as well as extending the basis of simulator training programs for operators;
4. increased simulation capacity to include synergistic effects of a larger segment of plant equipment and also postulated operator misactions and technical specification violations (these options would also permit an opportunity to increase the number of concurrent failures of various sorts assumed in the analysis).

Given the spectrum of initiating events currently used in Section 15, it would appear to be prudent to carry out transient analyses in a way which includes systematic consideration of additional postulated equipment malfunctions, postulated

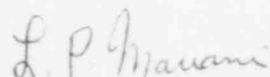
operator misactions, and possible technical specification violations. The first case of a transient induced by a given initiating event could be simulated with assumed normal function of all activated equipment. Then on a systematic basis with expanded simulation capability each of the supporting systems could be postulated to fail one at a time thereby permitting examination of the calculated course of the system for each new case. Additional cases of these transients could then be simulated using combinations and permutations of these postulated failures, operator misactions and assumed technical specification violations.

Once completed, a full and documented review of all such transients should be undertaken to collectively identify trends and commonalities, such as recurring troublesome system status conditions which may be calculated to develop. It is likely that specific and additional operator emergency procedures and design modifications could result from this process. Any trends identified by this review should be re-examined from time to time and compared with industry equipment failure tendencies to assure that accumulated system failure information is consistent with selected failure hypotheses incorporated into the safety analyses.

What in essence is being suggested is that a systematic and expanded fault tree event tree approach be undertaken as a standard part of the design efforts and operator training programs. The means to do this are available and the cost benefit ratio would not appear to be unfavorable.

ANI is at the present time alert and sensitive to developments in this and other areas of nuclear safety. In our efforts to reach insurance decisions we will certainly observe with keen interest the developments which take place over the near future and would specifically appreciate an opportunity to learn of any plans to modify the format and scope of Section 15.

Very truly yours,



Dr. Leo P. Mariani
Vice President - Liability Engineering

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