

D900816

The Honorable Kenneth M. Carr
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Carr:

SUBJECT: NRC RESEARCH ON ORGANIZATIONAL FACTORS

During the 364th meeting of the Advisory Committee on Reactor Safeguards, August 9-11, 1990, we reviewed, at the request of the NRC staff, the Commission's program of research related to organizational factors. Our Subcommittee on Human Factors also reviewed this matter during a meeting on July 31, 1990. During these meetings, we had the benefit of discussions with representatives of the NRC staff and its contractor, Brookhaven National Laboratory. We also had the benefit of the document referenced.

The NRC research program on organizational factors is intended to provide a scientific basis for improving the organizations responsible for operating nuclear power plants. The Commission has expressed concerns about the feasibility of such research and has asked to be briefed on the status of the program. We recognize the reasons for these concerns; the issues are difficult and are outside the mainstream experience of the NRC and the industry. This does not mean the issues should be ignored since they are of vital importance to nuclear power plant safety.

The Commission, the ACRS, and the nuclear power industry have recognized for the past several years that the quality of management associated with nuclear power plant operations is of cardinal importance to plant safety. During our August meeting, Dr. Herbert Kouts, the Chairman of the Special Committee to Review the Severe Accident Risk Report (NUREG-1150), summarized the results of that Committee's review. In response to a question, he noted his support for continuing NRC research on human reliability analysis, in particular research on the influence of organizational factors.

An important component of good management is an effective plant organization. Little quantitative basis exists for optimizing plant organizational design with respect to safety. This contrasts with the comprehensive technical bases that support many other aspects of nuclear power plant safety and design.

Under the present research program, the staff and its contractors are studying organizations ranging in scope and size from the total licensee force at a nuclear power plant site to the shift crews and smaller teams that perform essential functions of operation and maintenance. Depending on the results of this work, the program may be expanded at a later time to study the effect of utility and other organizations external to the plant. It has been recognized

that complex nuclear power facilities are operated and maintained by teams of people, not by individuals. Therefore, something more than training and licensing of individual operators is necessary to ensure plant safety.

The research program described to us by the staff appears to be focused on agency needs and can make a contribution to future improvements in the effectiveness of nuclear power plant organizations. We do have a concern that the research program seems to be directed toward the need to consider operator performance in PRAs in a more quantitative manner. This is a desirable ultimate goal; however, we believe that more emphasis should be placed on communicating to nuclear power plant licensees the insights developed on effective managerial approaches.

Continued support and encouragement for this research program from the Commissioners and the NRC staff management will be necessary. The research staff and its contractors are undertaking a difficult and pioneering effort. We will follow progress of the program with interest.

Additional comments by ACRS Member Harold W. Lewis are presented below.

Sincerely,

Carlyle Michelson
Chairman

Additional Comments by ACRS Member Harold W. Lewis

I was less impressed than my colleagues. All of American industry is concerned about the effect of organization on productivity and effectiveness - courses are taught, books are written, etc. I don't believe the need is for research, but for application of what is known to the NRC's regulatory problems. Not only the industry, but NRC itself, could benefit. No one doubts the importance of the subject.

Reference:

Draft SECY paper to the Commissioners from James M. Taylor, Executive Director for Operations, Subject: Organizational Factors Research Progress Report (Predecisional), transmitted by Memorandum dated July 5, 1990 from Tom Ryan, Office of Nuclear Regulatory Research, NRC, to Herman Alderman, ACRS