



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

October 8, 1997

Mr. L. Joseph Callan
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Mr. Callan:

SUBJECT: HUMAN PERFORMANCE AND HUMAN RELIABILITY IMPLEMENTATION
PLAN

During the 445th meeting of the Advisory Committee on Reactor Safeguards, October 2-3, 1997, we reviewed the human performance and human reliability implementation plan. Our Subcommittee on Human Factors reviewed this matter during a meeting on June 3, 1997. During these reviews, we had the benefit of discussions with representatives of the NRC staff and of the documents referenced.

Conclusions and Recommendations

1. The development of the Plan is still in progress. Although the mission of the human performance activities has been defined, it is not clear how the six programs listed in the plan will satisfy this mission. This may be due to the fact that the high-level model that we recommended in our February 13, 1997 report to show the connection between the objectives of these programs and Agency activities has not yet been developed.
2. Although ATHEANA appears to be a reasonable starting point for the development of the high-level model, it needs to be modified and expanded to serve the needs of the Plan.
3. We recommend that insights derived from operational experience be incorporated into the development of the high-level model.
4. We recommend that development of the Plan be given high priority, even if some of the activities listed in Appendix B of the Plan must be suspended.

Discussion

In our February 13, 1997 report, we commented that the Human Performance Program Plan was not a plan, but an inventory of human performance projects. Much progress has been made since then. The ATHEANA model has been put forth as a first step toward the development of a high-level model for integrating and prioritizing Agency activities associated with human performance. The staff told us that this high-level model has not yet been completed. Consequently, we cannot evaluate whether individual activities that the Agency is currently sponsoring will lead to an effective treatment of human performance.

We believe that the development of a high-level model remains urgent. It will allow the staff to articulate the objectives of the Plan and to show how individual activities contribute to the achievement of these objectives. It will also provide the basis for prioritizing these activities. Without such a high-level model, the need for many of the activities listed in Appendix B of the Plan is not apparent.

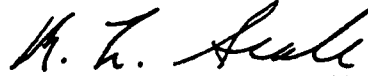
The use of ATHEANA as the starting point for the development of the high-level model is promising. The staff has acknowledged that ATHEANA, originally intended to serve as the basis for quantifying human error rates in probabilistic risk assessments, will have to be expanded and modified to serve the needs of the Plan. We agree that a model suitable for developing a research program in support of the Plan will be different from the ATHEANA model.

We emphasize the importance of incorporating insights from operational experience into the high-level model. We urge that the most significant lessons learned from operational experience be included in the current effort.

During our discussions with the staff, it became evident that the development of the Plan had been slowed, perhaps due to lack of adequate resources. We reiterate that the development of the Plan should be given high priority, even if some of the activities listed in Appendix B of the Plan must be suspended. We believe that the Plan will enable the staff to systematically prioritize and efficiently manage the Agency human performance related activities.

We will continue to work with the staff in this area.

Sincerely,

A handwritten signature in dark ink, appearing to read "R. L. Seale". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

R. L. Seale
Chairman

References:

1. Memorandum dated August 12, 1997, from M. Wayne Hodges, Office of Nuclear Regulatory Research, to John T. Larkins, Executive Director, ACRS, Subject: Transmittal of Human Performance and Human Reliability Implementation Plan.
2. ACRS report dated February 13, 1997, from R.L. Seale, Chairman, ACRS, to Shirley Ann Jackson, Chairman, NRC, Subject: Human Performance Program Plan.

