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FOR IMMEDIATE RELEASE
(Thursday, May 6, 1993)

NOTE TO EDITORS:

The Nuclear Regulatory Commission has received from its independent Advisory Committee on Reactor Safeguards two letter-type reports that provide comments on NRC staff initiatives to revise the NRC's Systematic Assessment of Licensee Performance program and the NRC's Organizational Factors Research program.

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Attachments:
As stated

April 30, 1993

The Honorable Ivan Selin, Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Selin:

SUBJECT: STAFF INITIATIVES TO REVISE THE SYSTEMATIC ASSESSMENT
OF LICENSEE PERFORMANCE PROGRAM

During the 396th meeting of the Advisory Committee on Reactor Safeguards, April 15-17, 1993, we discussed with representatives of the NRC staff and NUMARC the staff's final recommendations for changes to the Systematic Assessment of Licensee Performance (SALP) Program, as delineated in SECY-93-090. We also had the benefit of the documents referenced.

Since SECY-93-090 was a predecisional document before the Commission's April 15, 1993 SALP briefing, the NUMARC representatives did not have an opportunity to review it before our discussion.

In a number of our past reports, we have provided comments and recommendations to the Commission based on our assessment of the

SALP Program. In general, we have agreed with the longstanding industry position that major changes were needed to correct serious problems with the Program. A major thrust of our past comments and recommendations was that the staff inappropriately uses the Program as a means of imposing its demands and expectations (beyond what is required by the NRC's basic regulatory requirements) on nuclear power plant licensees. We have argued for a more effective set of checks and balances on the SALP Program and more NRC senior staff management involvement in monitoring its implementation.

The staff has evaluated comments related to the SALP Program that it received during its 1989 Regulatory Impact Survey and, in response to a Staff Requirements Memorandum, it developed "preliminary conclusions for changes to the SALP program" as described in SECY-92-290. The staff then sought public comment on these proposed changes. Additional changes are now being proposed by the staff as described in SECY-93-090.

We have the following comments and recommendations on this SECY paper:

- We agree with the staff that an effective, integrated program for periodically assessing licensee performance is a necessary regulatory tool.
- We believe that the changes to the SALP Program that the staff is proposing will prove to be beneficial. However, we continue to point out that many of the important changes are aspirational in nature. Good intentions do not always result in improved and more effective regulation. Accordingly, we recommend that the Commission establish a periodic feedback mechanism so that it can monitor the anticipated staff progress in improving the SALP Program. One such mechanism would be to conduct another Regulatory Impact Survey in one to two years after these changes to the SALP Program have been implemented.
- We recommend that the Commission formalize an appeal process that would permit a licensee to bring grievances regarding the application of the SALP Program to the attention of senior staff management without fear of retribution.
- We are persuaded by the staff's arguments that the objectives of the SALP Program require the use of a numerical grading system for the consolidated SALP Functional Areas.

We expect to interact with the staff and the industry on this important matter as experience is gained with the SALP Program.

Additional comments by ACRS Members James C. Carroll, Harold W. Lewis, and Charles W. Wylie are presented below.

Sincerely,

Paul Shewmon, Chairman
Advisory Committee on Reactor
Safeguards

Additional Comments by ACRS Members James C. Carroll, Harold W. Lewis, and Charles W. Wylie

We are in agreement with the Committee's report with the exception of the comment that the "objectives of the SALP Program require the use of a numerical grading system for the consolidated SALP Functional Areas." We believe that many of the internal and external difficulties with the Program would be lessened if the grading system were eliminated.

We note that INPO's periodic evaluation program does not use a numerical grading system for individual plant functional areas. Their program appears to be effective in communicating the results of the evaluations to the utilities. We also note that the staff's proposal is inconsistent in that the Plant Support Functional Area now comprises several important rating categories (including some that were previously classified as individual Functional Areas). Use of a single grade for the Plant Support Functional Area does not provide the numerical grades for these important categories that the staff claims it needs "in its allocation of resources to oversee, inspect, and assess licensee performance."

We recommend that the staff develop a pilot program (perhaps centered in one region) to test the effectiveness of the Program without the use of a numerical grading system. Recall that on December 21, 1989, the ACRS recommended that the Program be suspended, and that no new ratings be issued until it is fixed. Soon thereafter the Commission considered eliminating numerical ratings entirely, and the motion was defeated on a tie vote.

References:

1. SECY-93-090, dated April 6, 1993, for the Commissioners, from James M. Taylor, Executive Director for Operations, NRC, Subject: Systematic Assessment of Licensee Performance (SALP) Program
2. Letter, dated December 18, 1992, from Ivan Selin, NRC Chairman, to Joe F. Colvin, NUMARC, responding to NUMARC's October 20, 1992, letter on the SALP Program
3. Letter, dated October 20, 1992, from Joe F. Colvin, NUMARC, to Ivan Selin, NRC Chairman, providing industry views on the SALP Program
4. Letter, dated October 9, 1992, from Douglas S. Reynolds and David S. Repka, Winston & Strawn, to David L. Meyer, U.S. NRC, regarding SALP Program

5. SECY-92-290, dated August 19, 1992, for the Commissioners, from James M. Taylor, Executive Director for Operations, NRC, Subject: Systematic Assessment of Licensee Performance (SALP) Program
6. Memorandum dated December 20, 1991, from Samuel J. Chilk, Secretary, for James M. Taylor, Executive Director for Operations, NRC, Subject: SECY-91-172 - Regulatory Impact Survey Report - Final
7. Report from David A. Ward, ACRS Chairman, to Ivan Selin, NRC Chairman, Subject: The Staff's Recommendations on the Regulatory Impact Survey Report, September 10, 1991
8. Letter, dated December 11, 1990, from Zack T. Pate, Institute of Nuclear Power Operations, to Kenneth M. Carr, NRC Chairman, providing comments on the results of the NRC Regulatory Impact Survey and ACRS comments on regulatory coherence
9. Report from Carlyle Michelson, ACRS Chairman, to Kenneth M. Carr, NRC Chairman, Subject: Reevaluation of the SALP Program, September 12, 1990
10. Letter, dated September 4, 1990, from Joe F. Colvin, NUMARC, to Harold W. Lewis, ACRS, providing comments on proposed changes to the SALP Program
11. Report from Carlyle Michelson, Acting Chairman of ACRS, to Kenneth M. Carr, NRC Chairman, Subject: Coherence in the Regulatory Process, December 21, 1989

April 27, 1993

The Honorable Ivan Selin, Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Selin:

SUBJECT: REVIEW OF ORGANIZATIONAL FACTORS RESEARCH PROGRAM

During the 392nd, 394th, 395th and 396th meetings of the Advisory Committee on Reactor Safeguards, December 9-11, 1992, February 11-13, March 11-12, and April 15-17, 1993, respectively, we discussed the Office of Nuclear Regulatory Research (RES) budget for the human factors research program and SECY-93-020, "Review of Organizational Factors Research." In addition, during our February 11-13, 1993 meeting, representatives of the NRC staff and two of the contractors involved in the organizational factors research program (Brookhaven National Laboratory and University of California at Los Angeles) discussed their work. (The other contractors are the Pennsylvania State University and the Accident Prevention Group, Inc.) We also had the benefit of the document referenced.

Members of our Human Factors Subcommittee and two subcommittee consultants attended the November 12, 1992, senior staff management workshop on the organizational factors research program.

ACRS has followed this program since it was revived in 1987. SECY-93-020 provides the results of the comprehensive review performed by RES of its organizational factors research program and a description of changes to be made to the program as a result of this review. In the Summary Section of this SECY document, RES concludes that there is a relatively low cost-effectiveness in continuing regulatory research beyond FY 1993, until it is determined that organizational factors can be reliably integrated into PRA models. RES is meeting with NRR to coordinate further development of human reliability analysis modeling of organizational factors for PRA. It is possible that this further effort will continue at a low level of funding in FY 1994.

We were told that RES does not, at this time, propose to fund additional organizational factors research beyond FY 1993. We also learned from our discussions with RES representatives that its Nuclear Safety Research Review Committee had not reviewed and provided comments on the need for continuing this program prior to the issuance of SECY-93-020.

After extensive deliberations, we have been unable to arrive at a consensus with respect to the continuation of this research activity. We plan to take this matter up again when NRR completes its user needs evaluation with respect to organizational factors research.

Additional comments by ACRS Members James C. Carroll, Ivan Catton, Peter R. Davis, and Robert L. Seale are presented below.

Sincerely,

Paul Shewmon, Chairman
Advisory Committee on Reactor
Safeguards

Additional Comments by ACRS Members James C. Carroll, Ivan Catton, Peter R. Davis, and Robert L. Seale

We believe that the present organizational factors research effort should be continued to the point where a set of useful products becomes available for trial use by the staff and the nuclear utilities. Our reasons for this view are summarized below.

The Relationship Between Organizational Performance and Safety - The Historical Perspective Section of SECY-93-020 states that "poor organizational performance can be a major contributor to

safety significant events and that there is a need for an improved technical base for determining the impact of organizational performance on safety." We agree and further believe that this is one of the most important safety issues presently facing the nuclear power industry. The industry knows how to design extremely safe plants from a hardware point of view. However, operating experience indicates that there are many outstanding questions with respect to the ability of the nuclear utilities in the U.S. (and worldwide) to safely manage the operation and maintenance of both operating and future nuclear power plants. The organizational performance of the NRC staff is also of concern to us in that it can have an impact on the safety of the regulated industry.

We note that the SECY paper describes the organizational factors research programs being carried out by the regulatory authorities in Sweden, the UK, and France. This raises the obvious question as to why RES has concluded that its program is not cost-effective while other nations' regulatory authorities are actively pursuing this issue. We believe that it is of interest that none of these foreign programs are attempting to integrate organizational factors into PRAs.

It is our view that management science is a real and sophisticated academic field that needs to be tapped if the industry is to continue to make progress in dealing with organizational performance issues. There appears to be a lack of communication between the management science academic community and most policy-makers out in the "real world" of nuclear power plant regulation and operations. We believe that the Commission should encourage the involvement of the management science community in helping to improve the organizational performance of both the staff and the nuclear utilities.

RES Arguments for Terminating Organizational Factors Research - In SECY-93-020, RES makes the point that "the gathering of organizational factors data is resource intensive," but does not attempt to quantify this term. The presentations made to the Committee by the current contractors suggest that much less resource intensive approaches, relative to those used in the early phases of this work, are possible. The real test will be in the application of the products of this research when the benefits obtained can be compared to the resources invested.

RES also states that "there is a relatively low cost-effectiveness in continuing regulatory research beyond FY 1993, until it can be determined that organizational factors can be reliably integrated into PRA models." We were told by the contractors that the development and validation of these measurement tools are necessary before the integration of organizational factors into PRA models can be properly demonstrated. RES appears to have created a classic catch 22 situation in the position it has taken.

The Implications of Terminating Organizational Factors Research - RES states in the SECY paper that "the research products developed to date will be integrated by the end of FY 1993 for possible use in inspection and diagnostics evaluations." Based on our discussions with the contractors, we have concluded that the program to develop and verify organizational factors measurement tools is far from being completed. It appears to us that there is a major risk in exporting the present products to the field, since their almost certain unsuccessful application will bring this work into disrepute and create a significant obstacle to future developments in this field.

The Cost of Completing the Present Organizational Factors Research Program - The contractors were asked for their estimates of the time and cost to carry the present research to the point where a set of useful products (both organizational factors measurement tools and PRA modeling techniques) would become available for trial use by the staff and the nuclear utilities. They indicated that this would require an additional three years of effort at an annual funding of about \$0.5 million (a small fraction of the current research program support budget). This additional \$1.5 million expenditure is to be contrasted with the \$3.8 million that has been expended on organizational factors research since 1987.

Our Reasons for Supporting Continuation of the Present Organizational Factors Research Effort - We believe that there is a reasonable expectation that products useful to both the NRC and the industry will be developed if the present program is completed. We further believe that completion of this program meets the benefit/cost test when compared with the expected benefits of many other research activities that have been, and are continuing to be, supported by the staff.

We see a strong analogy between the present status of organizational factors research and the status of PRA methodology 20 years ago when the Reactor Safety Study, WASH-1400, was begun under the leadership of the AEC. There were many, both within the NRC and industry, who argued at the time that PRA was a nice theoretical exercise, but would never have practical uses. Today, PRA is employed as an extremely valuable, multi-use tool by both the NRC and the regulated industry. Without this initial leadership by the agency, it is doubtful that PRA would be at today's state of development.

We believe that it is likely that the organizational factors measurement tools that are currently under development and their possible integration into PRAs will play an important role in nuclear power plant safety technology in the years to come. We do expect that it will be necessary, just as it was with the development of PRA, for the NRC and industry to expend additional resources on organizational factors research.

There are considerable demands presently being placed on staff and licensee resources in such activities as the SALP Program and Diagnostic Team Inspections. For licensees, the periodic INPO evaluations create additional demands. If appropriately validated organizational factors measurement tools can be developed, it would be possible to optimize the use of staff and licensee resources in assessing licensee organizational performance. The present staff approach in assessing licensee organizational performance does not have an appropriately validated basis and is subject to legal challenge (such a challenge has already been made with respect to the SALP Program). Continuing this research program to provide validated organizational factors measurement tools has the potential of providing the staff with a much more defensible basis for its SALP Program and Diagnostic Team Inspections.

After organizational factors measurement tools become available, it will be possible to undertake completion of the next step; the modeling of organizational factors into PRAs. If this modeling can be done in a credible manner, it would then be possible to assess how risk is apportioned between hardware and human performance. This would provide much needed insight into the manner in which NRC research efforts and inspection and enforcement resources should be allocated. It would also assist the staff and licensees in evaluating and correcting risk-significant weaknesses in their organizations.

We do not, however, believe that the integration of organizational factors into PRA should be the main focus of the present research program. Due to the complex, amorphous, and temporal nature of organizational performance, this objective may not be attainable. Rather, we believe that the emphasis should be on providing organizational effectiveness measurement tools to help the staff and the utilities better design and manage their organizations and to help the NRC make better judgments about the performance of licensee organizations. If the present integration efforts produce useful PRA input, so much the better. (We do believe that progress has been made by the researchers involved in this effort and recommend that this work be continued.)

Finally, we believe that the manner in which this research program has been carried out by the staff is representative of a serious generic problem that the staff has in dealing with complex issues that cut across staff organizational boundaries. We recommend that the EDO review the manner in which the various elements of the staff collaborated in developing the research objectives and in providing consistent guidance to the organizational factors research contractors. We expect such a review to lead to improved staff policy guidance on the coordination of future research efforts of this nature.

Reference:

SECY-93-020, dated February 1, 1993, for the Commissioners, from James M. Taylor, Executive Director for Operations, Subject: Review of Organizational Factors Research