

# UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D.C. 20555-0001

DEC 3 0 1993

Dr. David Morrison, Chairman Nuclear Safety Research Review Committee The MITRE Corporation 7525 Colshire Drive McLean, VA 22102-3481

Dear Dr. Morrison:

I am replying to your September 30, 1993, letter that gives the results of the July 7-8, 1993 NSRRC meeting. The Committee addressed three administrative matters, i.e., performance measures for accountability and adequacy of programs, identifying and maintaining critical skills in the Office of Research, and efforts needed to prevent deterioration of the staff's technical skills; the Committee indicated dissatisfaction with the rate of progress in source term and seismic hazard rulemaking; the Committee cautioned RES to make clear the role of the Thermal-Hydraulic consultants so as to avoid any confusion of role between this group and the NSRRC; finally the Committee urged RES to continue pressing on closure of the Severe Accident Research Program. I am responding to NSRRC advice on these matters, point by point, in Enclosure 1 attached. Please let me know if you have any questions or additional observations to make on these points.

I appreciate the efforts and advice of the NSRRC on its review of RES activities.

Sincerely,

1. S. Burn

Eric S. Beckjord, Director Office of Nuclear Regulatory Research

Enclosures:

- 1. Specific Comments
- 2. Criteria for Evaluating Research Projects
- Memorandum, S. Chilk, Secretary, to J. Taylor EDO, "Staff Requirements -- Briefing on Status of Part 100 Rule Change and Proposed Update on Source Term and Related Issues, 10 a.m., Tuesday August 3, 1993," dated 8/12/93.
- 4. Excerpts from FRN of License Renewal Workshop
- 5. Accident Management Viewgraphs from August 2, 1993 Severe Accident Subcommittee Meeting

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Enclosure 1

# SPECIFIC COMMENTS

#### 1. NSRRC Statement (p. 2):

"Reassessment of the [declining runding] situation as it evolves with regard to the mix of the budget and internal staffing, as well as the establishment of performance measures to assess the accountability and adequacy of the program and the establishment of a monitoring process will be a management priority within RES and a subject to be examined by the NSRRC."

#### Response:

The Office of Nuclear Regulatory Research (RES) has recently taken determined management steps to strengthen the establishment and application of performance measures and accountability with respect to them in the planning and conduct of research programs and the communication of research results. Two RES Office Letters issued on November 26, 1993, provide strengthened and clarified guidance:

RES Office Letter No. 4 -- Planning Research Programs.

This letter summarizes the basic policies and principles supporting the scope, nature, and need for research and the planning of research programs.

RES Office Letter No. 6, Revision 1 -- Implementing Research Projects.

This letter summarizes the basic policies and procedures used by RES to define, implement, and successfully complete approved research projects. It describes policies and procedures to guide the management of projects through their life cycle.

The letter contains a recapitulation of criteria for evaluating research projects reproduced here as Enclosure 2. The criteria reflect the research philosophy statement that has been a part of the current and recent NRC Five-Year Plans.

Copies of these RES Office Letters are available to NSRRC members upon request.

#### 2. NSRRC Statement (p. 2):

"Since the subject of staffing is not a problem solely within RES, the Committee recommends that a coordinated agency-wide effort be made to identify and maintain critical skills."

# Response:

The importance of such a coordinated agency effort is recognized. Although your entire letter has, as usual, been provided to the Executive Director for Operations and the Commission, I have called this recommendation of the Committee to the EDO's particular attention, in view of its wide organizational bearing.

# 3. NSRRC Statement (p. 2):

"Creative and concerted efforts throughout the NRC must be taken to ensure that the technical competence of the staff does not deteriorate, and the NSRRC applauds the support that the Commissioners have given to the goal of securing and enhancing the technical capability of the staff. Publication of technical papers is not, however, a necessary criterion to evaluate the capability of the staff. In fact, RES staff cannot be expected to have the time available to write original papers g' en their technical program management mandate. Moreover, joint authorship with contractors often can compromise the direction RES employees must give to these potential publication coauthors. Many examples exist in the area of government nuclear organizations (e.g., Naval Reactors, 1955-present; Reactor Development and Technology, 1965-1975) which attracted technically competent program managers who did not publish in the technical literature."

# Response:

We agree with the Committee that publication of technical papers is not a necessary criterion to evaluate the capability of the staff. Nevertheless, we believe there are many benefits associated with publication of technical papers by the staff. First, it must be recognized that several staff are now actively engaged in "hands on" safety analyses, running large, complex computer codes, such as RELAP5 and MELCOR, and evaluating the results in order to assist the staff in making decisions about research. This is highly technical work of the same caliber as is being conducted by the National Laboratories and the industry, and certainly worthy of publication in peer reviewed technical journals.

Second, even though many of the staff do not do "hands on" research, they are the ones who identify the safety or regulatory issue, see that the research program is carried out, and explain how the results will be used. We have found that this type of information is of great interest to the research community as well as the industry, and journal articles or conference papers that discuss the "big picture" are usually well received. Writing journal articles or conference papers also forces the author to organize his or her thoughts on the subject and write them down in a logical and coherent way. This helps the author in becoming a more effective communicator, and can even result in improvements to the research program.

Finally, authoring a journal article or conference paper gives the staff member much more exposure to the technical community, with all of the attendant benefits, including the author's professional development.

In summary, I agree with the Committee that publication of articles and papers should not be a requirement for the staff. I intend, however, to continue to encourage the staff to publish articles and papers when appropriate.

### 4. NSRRC Statement (p. 3):

"The role of RES in rulemaking/policy positions is not always clear to the Committee. In this activity, the products of research should be used to focus the results into action. In two areas, the Source Term and Seismic Hazards, progress toward resolution of NRC's positions has been painfully slow. NSRRC plans to examine these topics to determine whether the technical program has been the source of the delay and, if so, what steps could be taken to speed the process."

## Response:

The Commission was briefed by the staff on August 3, 1993 regarding the update of the source term as well as the proposed revision to 10 CFR Part 100, the Reactor Site Criteria rule. On August 12, 1993, the Commission issued a staff requirements memorandum (SRM) (Enclosure 3), in which the Commission raised several issues concerning the proposed revisions to Part 100 and requested additional information. The issues raised relate not to the source term and seismic research but rather to the way in which the current understanding of the technical issues should be given regulatory expression -- including how the source term results should relate to siting criteria and the appropriate balance between deterministic and probabilistic seismic evaluations. The staff is preparing a Commission paper in response to the SRM. This paper is expected to be submitted about January 3, 1994. Copies will be sent to the NSRRC.

# 5. NSRRC Statement (p. 3):

"Licensing renewal is effectively in limbo, in part because of the lack of effective NRC policy that can be depended upon by industry. NSRRC will examine in detail RES plans and schedules regarding effort in this area. As it has noted in the past, the Committee recommends that the subject of aging phenomena be separated from the considerations of license renewal. In addition, the Committee notes that closure of all aging research will be achieved by 1998."

#### Response:

In the License Renewal Rule area, the Commission has directed further consideration of the rule and its implementation in the light of implementation planning experience to date, the promulgation of the Maintenance Rule, and industry comments. A public workshop on license renewal was held on September 30, 1993, at Commission direction, to evaluate alternative approaches to license renewal that could better take advantage of existing licensee programs. Enclosure 4, excerpted from the <u>Federal Register</u> notice of the workshop, provides a more detailed status update. The NRR staff is in the process of evaluating the information gained during this workshop and plans to make a recommendation to the Commission describing the suggested approach to license renewal in December 1993.

We confirm that closure of all major aging research programs is still planned to be achieved by 1998. We are giving consideration to what provisions the agency will need to make to retain capability to respond to new safety issues that may arise in this area after closure of current programs.

# 6. NSRRC Statement (p. 3):

"The Committee was made aware of the enlistment of thermal hydraulic consultants to assist the staff in addressing technical issues related to advanced reactor designs. While NSRRC perceives the value of obtaining such advice, the role of these individuals should be clarified so that they do not function as an advisory committee or become confused with the role of the NSRRC."

#### Response:

The role of the thermal hydraulic consultants is to provide assistance to the staff on dealing with specific technical issues associated with the thermal hydraulic codes and testing programs. In the longer term we expect them to provide assistance to the staff in improving and maintaining an effective thermal hydraulic research program. They are not an advisory committee (and in fact cannot legally function as one). Individual consultants can and will provide us their own individual advice from time to time on specific technical issues (e.g., the adequacy of specific code models). Their function does not overlap or duplicate that of the NSRRC. We will be pleased to summarize our meetings with the consultants to date as well as their current efforts at a future meeting of the Committee (or cognizant subcommittees).

#### 7. NSRRC Statement (p. 3):

"The natural conclusion of the severe accident program lies in the development of appropriate accident management responses. From the limited discussion of this topic at our meeting it appears that industry's timetable for achieving this end goal is protracted. The NSRRC will seek assurance that the research program is not a cause for this delay, but rather that RES is accelerating closure of the severe accident program by addressing use of its results in accident management plans."

#### Response:

Please note that accident management was not discussed at the July 7-8 Committee meeting, but rather was briefly discussed at the Severe Accident Subcommittee meeting on August 2, 1993, to state that we had completed our research program and that the industry had assumed the lead responsibility for developing and putting in place accident management programs at their plants. We also explained that the industry program was delayed primarily because the utilities created owners' groups for each vendor design, and these owners' groups were to develop vendor design-specific accident management procedures. This was not in the original industry schedules and imposed about a year's delay in their program. The relevant viewgraphs we used at this meeting are enclosed (Enclosure 5).

feclosure 2

# CRITERIA FOR EVALUATING RESEARCH PROJECTS

(Adapted from Nuclear Regulatory Research Philosophy in NRC Five-Year Plan)

- Is the research relevant to an important or risk-significant regulatory issue? To what regulatory issue does it pertain? How? Does the 1. importance or risk significance of the issue warrant a high or at least medium priority office ranking?
- Are the research results expected to affect resolution of the regulatory issue? What is the expected benefit of the knowledge that the research 2. will produce?
- Is the estimated cost justified by the value of the knowledge to be 3. gained?
- For the particular issue, are the best people doing the work and are the 4. best laboratories being used?
- Has there been competition of ideas in selecting the direction and 5. approach for the research?
- For near-term needs, will the results be timely? For longer-term exploratory research, is it a reasonable expectation that the 6. forthcoming results can be applied to NRC needs?
- Is the work within budget? On schedule? 7.
- Has appropriate peer review been incorporated in the research plan? Are 8. its results taken into account?
- Has the work been completed? Has it answered the specific question(s) 9. addressed?
- Was the work terminated when the initiating question was answered and the value of further information tapered off to a point beyond what is 10. worthwhile?
- Have results been effectively communicated to users? To the public? 11.
- Have the research results been recognized and used, as applicable, by 12. peers, users, the international community?