



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

February 18, 1999

The Honorable Shirley Ann Jackson
Chairman
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Jackson:

SUBJECT: LIST OF QUESTIONS TO BE ADDRESSED FOR POSSIBLE RESOLUTION OF
KEY ISSUES ASSOCIATED WITH THE PROPOSED REVISION TO 10 CFR
50.59 (CHANGES, TESTS AND EXPERIMENTS)

During the February 3, 1999 meeting between the Commission and the Advisory Committee on Reactor Safeguards, the Commission requested that the ACRS provide a list of questions which, if answered, would aid in the resolution of key issues associated with the proposed near-term revision to 10 CFR 50.59. In our discussion of this request during our 459th meeting on February 3-6, 1999, we considered two approaches to the resolution of the issues associated with 10 CFR 50.59 and developed questions for each of these approaches.

In Approach 1, we propose a minimal set of questions that, if addressed, would preserve the desirable attributes of the 10 CFR 50.59 process that has been in place for over 30 years. In Approach 2, we propose another set of questions that, if addressed, would result in more profound changes to the 10 CFR 50.59 process. Both of these approaches are intended to address the proposed near-term revision to provide clarity and flexibility in the existing requirements, and not the long-term risk-informed revision to 10 CFR 50.59.

APPROACH 1: Reconciliation of the Differences Between 10 CFR 50.59 and NEI 96-07

There is general agreement that the 10 CFR 50.59 process has worked well for over 30 years. Licensee implementation of the current process has been based on the guidance provided by NSAC-125, which the industry has attempted to improve through the development of NEI 96-07. The NRC staff has never formally endorsed the guidance included in these documents, but the staff has acknowledged that the overwhelming majority of the safety evaluations performed by licensees using this guidance have been acceptable. We believe that answering the following questions would provide a near-term revision to 10 CFR 50.59 that could optimize the benefits of past practice and provide regulatory stability.

1. What are the specific elements of the guidance in NEI 96-07 that the staff finds unacceptable?
2. Are these elements unacceptable because the staff believes they contradict the legal requirements of the current 10 CFR 50.59, or because they are technically inadequate?
3. What are the minimum changes that must be made to 10 CFR 50.59 and NEI 96-07 so that the proposed rule and the guidance are consistent?

Observation on Approach 1

Answering the above questions could provide a near-term solution for 10 CFR 50.59 that would maintain a process that has worked successfully and provide regulatory stability by requiring only limited changes to the process currently implemented by licensees and the staff. Such a process would, however, still require safety evaluations for many changes of little or no risk significance.

APPROACH 2: Consideration of Margin of Safety and Definition of Change Associated with the Proposed Revision to 10 CFR 50.59

It is possible that, even in the short term, more profound changes to the 10 CFR 50.59 process can be developed by considering the fundamental goal and intent of the 10 CFR 50.59 process. To do this would require resolution of the following questions:

Margin of Safety

1. Do the current Technical Specification acceptance limits provide sufficient assurance of safety? If not, to what extent should the current Technical Specifications be modified to achieve the needed margin of safety?
2. Should the guiding principle be that cumulative changes do not result in exceeding the limits or is there a need for margin between a "best estimate" calculated value and the limits to provide confidence that the limits have not been exceeded? Should licensees be allowed to incrementally approach the limits?
3. Can the NRC accept a calculated value from a licensee based on the licensee's NRC approved methodology without prior NRC review? If not, what is needed to provide assurance that the Technical Specification limit has not been exceeded as a result of cumulative changes?
4. Can operational experience be used to quantify the "conservatism" in the licensee's methodology? If not, is the only alternative to perform an uncertainty analysis on the licensee's methodology?
5. If it is established that the licensee's methodology is conservative, is that sufficient to ensure that the cumulative effects (even when these are calculated not to exceed the

acceptance limits) still provide acceptable confidence that the limits have not been exceeded?

Definition of Change

The definition of "change" is central to the screening step that is implicit in the 10 CFR 50.59 process. The staff needs to define important structures, systems, and components (SSCs) as they relate to the facility, procedures, tests and experiments, malfunctions and accidents. In addressing the definition of change, we have developed the following questions:

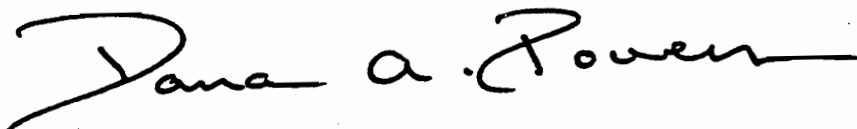
1. Does the updated Final Safety Analysis Report (FSAR) constitute an adequate and complete description of the facility for the purpose of ensuring adequate protection of the health and safety of the public?
2. Does any change to the facility or procedures described in the updated FSAR, irrespective of its safety significance, require a safety evaluation?
3. Do proposed changes to SSCs not referenced in the updated FSAR, but affecting the safe performance of SSCs described in the updated FSAR, require safety evaluations?
4. What consequences, other than those having an effect on safety system performance, should be considered in a safety evaluation?
5. Can references to "probability" be deleted from the definitions of minimal changes?

Observation on Approach 2

It appears to us that many of the options for changes in the definition of "margin of safety" currently being considered greatly increase the importance of tracking the cumulative effect of such changes. Although the vast majority of changes introduced under the 10 CFR 50.59 process would still involve negligible changes in risk, the new definitions certainly could result in changes that, while acceptable, would not be negligible. This might require more frequent updating of the FSAR and a far more rigorous tracking of the changes. It is not clear to us that this might not result in more regulatory burden than a 10 CFR 50.59 process that is more restrictive on changes.

We plan to continue our review of the proposed revision to 10 CFR 50.59 during future meetings.

Sincerely,

A handwritten signature in black ink, reading "Dana A. Powers". The signature is fluid and cursive, with a long horizontal line extending from the end.

Dana A. Powers
Chairman

References:

1. Proposed rule dated October 14, 1998, from John C. Hoyle, Secretary, NRC, to the Federal Register, Subject: 10 CFR Parts 50, 52, and 72, RIN 3150-AF94, Changes, Tests and Experiments.
2. Electric Power Research Institute, Nuclear Safety Analysis Center, NSAC-125, "Guidelines for 10 CFR 50.59 Safety Evaluations," June 1989.
3. Nuclear Energy Institute, NEI 96-07, Revision 0, "Guidelines for 10 CFR 50.59 Safety Evaluations," September 1997.