

D940513

Mr. James M. Taylor
Executive Director for Operations
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Taylor:

SUBJECT: PROPOSED RULE FOR SHUTDOWN AND LOW-POWER OPERATIONS

During the 409th meeting of the Advisory Committee on Reactor Safeguards, May 5-7, 1994, we reviewed the NRC staff proposed Rule and associated Regulatory Guide pertaining to the conduct of shutdown and low-power operations. During this review, We had the benefit of discussions with representatives of the Office of Nuclear Reactor Regulation and the Office of the General Counsel, the Nuclear Energy Institute (NEI), and the Combustion Engineering Owners Group (CEOG). We have previously commented on the staff program to resolve this issue in our letters dated August 13, 1991, April 9, 1992, and September 15, 1992. We also had the benefit of the documents referenced.

In our September 15, 1992 letter, we commented on three issues that were of concern to us: proposed technical specifications for PWR containment integrity, proposed requirements for fire protection during shutdown, and the adequacy of the staff regulatory analysis. Your letter of October 16, 1992 indicated that the staff was in general agreement with our comments. (At the time of these letters, the staff was planning to utilize a generic letter, instead of rulemaking, to resolve this issue.) In addition, you stated that the staff would provide written responses to five questions raised by the Committee members during an April 1, 1992 Subcommittee meeting. The staff provided this information in a letter dated September 20, 1993, and we concluded that these responses were generally satisfactory.

Our present review has been based on the rulemaking package provided to the Committee to Review Generic Requirements (CRGR) for its review, as supplemented by a revised package containing changes the staff proposes to make in response to the recommendations made by the CRGR. In addition, we considered the views presented by the CEOG in its letter dated April 8, 1994.

The staff now proposes to resolve concerns regarding the conduct of shutdown and low-power operations by rulemaking that would require that licensees (1) plan and control outages in a way that provides reasonable assurance that the key safety functions of maintaining the reactor subcritical, removing decay heat, and maintaining reactor coolant system (RCS) inventory will be preserved;

(2) establish limiting conditions for operation and surveillance requirements for specific equipment relied on during shutdown and low-power operations; (3) demonstrate, by analysis, that those functions necessary to remove decay heat from the reactor can be maintained during cold shutdown and refueling conditions in the event of a fire in any plant area; (4) install instrumentation for monitoring water level in the RCS of pressurized water reactors during midloop operation.

We believe that improvements are needed in the conduct of shutdown and low-power operations. However, we have concluded that the staff has not made a sufficient case in its regulatory analysis either quantitatively or qualitatively to satisfy the requirements specified in 10 CFR 50.109. Where quantitative support for a backfit decision is not practicable, the use of subjective judgment should be acknowledged and the bases better substantiated than was done in this case.

Many of the staff-proposed improvements appear to have merit; some have already been adopted by the industry; others appear to require additional thought. (The CEOG provided us with data, for the period from 1989 through 1993, that demonstrate a substantial reduction in licensee events occurring during shutdown and involving loss of decay heat removal capability.) We believe that specific requirements of the Rule should continue to be the subject of a dialogue between the staff and NEI and that issuance of the Rule for public comment should be deferred until this dialogue is completed. We also believe that insights from the recently completed PRAs performed under a contract with the Office of Nuclear Regulatory Research should be considered.

Our comments relating to the safety improvements that the staff believes would result from this proposed rulemaking are as follows:

In the regulatory analysis the staff states that "... a licensee program that (1) fully implements the guidelines in NUMARC 91-06 (Guidelines for Industry Actions to Assess Shutdown Management) and (2) incorporates the features regarding fire protection and instrumentation listed in Table 2.1 would be consistent with the staff assumptions regarding the administrative controls portion of this improvement (Improvement A)."

NEI believes that the industry initiative, as delineated in the NUMARC 91-06 document, obviates the need for including outage planning and control requirements in this rulemaking. NEI stated during our meeting that all power reactor licensees are implementing these Guidelines. The staff acknowledges that implementation of these Guidelines has been "a significant and constructive step, effects of which have already been realized by many utilities ... in recent outages." We believe that past industry initiatives have proven to be an effective means of resolving safety issues without the need for rulemaking (e.g., Institute of Nuclear Power Operations accreditation of licensee training programs). This leads us to question the need for additional regulation relating to outage planning and control requirements.

We do not believe that the staff has clearly defined what is expected of licensees relative to fire hazards assessment and associated fire contingency plans, including the bases for such plans. We plan to review the results of the NRC staff reassessment of its fire protection program as discussed in SECY-93-143. Discussion of shutdown fire hazards will be a part of this review.

The staff has proposed a requirement for equipping PWRs with new water level instrumentation for midloop operation that would rely on measurement techniques not affected by pressure errors. The staff acknowledges that control of level, based on existing measurement techniques, has improved as a result of the requirements contained in GL 88-17, "Loss of Decay Heat Removal." The incremental safety improvement that would result from the addition of new water level instrumentation needs to be evaluated and contrasted with that resulting from more vigorous enforcement of the GL 88-17 requirements.

The staff has proposed a number of technical specifications for the control of safety-related equipment during shutdown and low-power operations. NEI points out that these requirements overlap those cited in Section 50.65(a)(3) of the Maintenance Rule, which specifies that "In performing monitoring and preventive maintenance activities, an assessment of the total plant equipment taken out of service should be taken into account to determine the overall effect on the performance of plant safety functions." This section of the Maintenance Rule appears to provide the staff with the enforcement authority necessary to ensure proper control of safety-related equipment during shutdown and low-power operations. The use of such an approach also recognizes that the risk arising from shutdown and low-power operations is plant-specific in nature. Additionally, this approach would also provide licensees with more flexibility in their management of outage work.

We wish to be kept informed as development of this important issue progresses.

Sincerely,

T. S. Kress
Chairman

References:

1. Memo dated May 2, 1994, from M. Virgilio, Office of Nuclear Reactor Regulation, to J. Larkins, ACRS, transmitting revised copy of proposed Rule and associated draft Regulatory Guide on shutdown and low-power operations
2. Memorandum dated March 14, 1994, from F. Miraglia, Office of Nuclear Reactor Regulation, for E. Jordan, Chairman, Committee to Review Generic Requirements, transmitting proposed rulemaking package on shutdown and low-power operations containing: Federal Register Notice with proposed Rule, a draft Regulatory Analysis, draft Regulatory Guide 1.XXX, "Shutdown and Low-Power Operations at Nuclear Power Plants", and NUREG-1449, "Shutdown and Low-Power Operations at Commercial Nuclear Power Plants in the United States"
3. Letter dated April 8, 1994, from R. Burski, Chairman, CE Owners Group, to J. E. Wilkins, ACRS, transmitting comments on proposed regulatory requirements for shutdown and low-power operations
4. Letter dated March 28, 1994, from W. Rasin, Nuclear Energy Institute, to E. Jordan, AEOD, transmitting comments on proposed regulatory requirements for shutdown and low-power operations
5. Memorandum dated September 20, 1993, from A. Thadani, Office of Nuclear Reactor Regulation, for J. Larkins, ACRS, transmitting "Questions from the Operations Subcommittee Regarding Shutdown and Low-Power Operations"
6. Letter dated September 15, 1992, from D. A. Ward, Chairman, ACRS, to J. M. Taylor, EDO, Subject: NRC Staff's Proposed Resolution of Issues Identified in its Evaluation of Shutdown and Low-Power Operations
7. Letter dated October 15, 1992, from J. M. Taylor, EDO, to D. A. Ward, Chairman, ACRS, Subject: NRC Staff's Proposed Resolution of Issues Found During its Evaluation of Shutdown and Low-Power Operations
8. Letter dated April 9, 1992, from D. A. Ward, Chairman, ACRS, to J. M. Taylor, EDO, Subject: Evaluation of the Risks During Shutdown and Low-Power Operations for U.S. Nuclear Power Plants
9. Letter dated August 13, 1991, from D. A. Ward, ACRS Chairman, to J. M. Taylor, EDO, Subject: Evaluation of Risks During Low-Power and Shutdown Operations of Nuclear Power Plants