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

April 19, 1999

Dr. William D. Travers
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Dr. Travers:

SUBJECT: SECY-99-017, "PROPOSED AMENDMENT TO 10 CFR 50.55a"

During the 461ST meeting of the Advisory Committee on Reactor Safeguards, April 7-10, 1999, we reviewed SECY-99-017. Also, our Materials and Metallurgy Subcommittee met on March 24-25, 1999, to review this matter. During these reviews, we had the benefit of discussions with representatives of the NRC staff and the Nuclear Energy Institute (NEI), and of the documents referenced.

Recommendation

We recommend against eliminating the 120-month update requirement for inservice inspection (ISI) and inservice testing (IST) programs from the proposed amendment to 10 CFR 50.55a.

Discussion

In May 1995, we decided not to review the proposed amendment to 10 CFR 50.55a until after the staff reconciled public comments. Since then, the proposed amendment has undergone numerous changes. The staff has reviewed the public comments and is preparing the proposed final amendment to 10 CFR 50.55a. Based on internal staff discussions and the public comments, the staff is considering eliminating the regulatory requirement that licensees update their ISI and IST programs to the latest American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code every 120 months. Before proceeding with the final amendment to 10 CFR 50.55a, the staff plans to request public comments specifically on the proposed elimination of the 120-month update requirement.

The staff originally endorsed the ASME Code in 1971. Recognizing that the ASME Code would be updated as experience was gained with its application, the staff also required licensees to update their ISI and IST programs every 120 months.

The primary justifications for the proposed elimination of the update requirement are the maturation of the currently applicable ASME Code and the reduction of the burden on licensees caused by the updating of ISI and IST programs.

We are perplexed by the argument that experience suggests that the current ASME Code requirements have reached such a level of maturity that further updating will provide little benefit. We have recently reviewed a staff safety evaluation report (SER) on a Westinghouse topical report concerning risk-informed inspections. The topical report demonstrated that current ASME Code inspections were not an effective use of resources, and that significant improvements in inspection efficiency could be achieved through the use of risk insights and operational experience. In addition, pilot efforts on risk-informed IST seem to promise similar benefits.

During the past decade, experience has shown that performance demonstrations are superior to prescriptive requirements for qualifying inspectors and inspection techniques. The experience of the past decade has also demonstrated that new modes of degradation can occur and may require changes in inspection procedures. Erosion/corrosion, boiling water reactor (BWR) vessel internals cracking, and circumferential stress corrosion cracking of steam generator tubes were not recognized as important degradation modes a decade ago and inspection procedures had to be updated to deal with such degradation modes. Inspection technologies have also matured. Indeed, in technologies that are heavily dependent on electronics and computer analysis of signals, a decade may represent four or five generations of technology.

This experience suggests that inspection technology is not so static and mature that 120-month updates are unnecessary. Rather, changes in technology and inspection requirements frequently require prompter action than can easily be accommodated by modifications of the ASME Code. The review of operational experience and technology changes through the ASME Code consensus process is important and worthwhile. The 120-month update provides a good baseline for inspection requirements.

In SECY-99-017, the staff recommends the elimination of the 120-month update requirement. Anecdotal information in SECY-99-017 suggests that a typical update may cost a licensee $200,000 to $300,000 every 10 years. An NEI representative cited an anecdotal number of $1 million. Even if this higher estimate is more realistic, the resultant burden does not seem excessive since the actual costs of inspections are far higher than the update costs. Updating would be expected to provide more cost-effective inspections and lower exposures.

In SECY-99-017 the staff states that if the 120-month update requirement is eliminated, licensees who voluntarily choose to update to a later ASME Code edition or addenda

will be required to implement all provisions of that edition or addenda. We concur with this staff position on implementing all the provisions of an edition or addenda.

Sincerely,

Dana A. Powers

Dana A. Powers
Chairman

References:

1. SECY-99-017, memorandum dated January 13, 1999, from William D. Travers, Executive Director for Operations, NRC, for the Commissioners, Subject: Proposed Amendment to 10 CFR 50.55a.
2. U. S. Nuclear Regulatory Commission, Safety Evaluation Report Related to "Westinghouse Owners Group Application of Risk-Informed Methods to Piping Inservice Inspection" (Topical Report WCAP-14572, Revision 1), October 1998 (Predecisional).
3. Westinghouse Energy Systems, WCAP-14572, Revision 1, "Westinghouse Owners Group Application of Risk-Informed Methods to Piping Inservice Inspection Topical Report," October 1997.
4. Westinghouse Energy Systems, WCAP-14572, Revision 1, Supplement 1, "Westinghouse Structural Reliability and Risk Assessment (SRRA) Model for Piping Risk-Informed Inservice Inspections," October 1997.
5. Letter dated August 14, 1998, from John N. Hannon, Office of Nuclear Reactor Regulation, NRC, to C. Lance Terry, TU Electric, Subject: Approval of Risk-Informed Inservice Testing (RI-IST) Program for Comanche Peak Steam Electric Station, Units 1 and 2.