



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

ACRSR-1566

PDR

June 14, 1994

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

Dear Chairman Selin:

SUBJECT: THERMO-LAG FIRE BARRIERS

During the 410th meeting of the Advisory Committee on Reactor Safeguards, June 9-10, 1994, we discussed the proposed staff approach for resolving Thermo-Lag fire barrier issues with representatives of the NRC staff and Nuclear Energy Institute (NEI). Our Subcommittee on Auxiliary and Secondary Systems reviewed this matter during a meeting on June 8, 1994. We also had the benefit of the documents referenced. This report is in response to the March 18, 1994 Staff Requirements Memorandum.

We agree with the staff's view that an immediate order to require upgrading of inadequate Thermo-Lag fire barriers is not needed based on defense-in-depth arguments and the fact that compensatory measures are already in place at those plants that have not resolved their Thermo-Lag problems.

In SECY-94-127, the staff describes the following four options for resolving the Thermo-Lag fire barrier issues:

- Option 1 - Require Compliance with Existing NRC Fire Barrier Requirements
- Option 2 - Develop Guidance for Rating Fire Barriers Based Upon a Range of Combustible Loadings for Fire Endurance Tests
- Option 3 - Develop a Performance-Based Approach Using a Lead Plant
- Option 4 - Develop a Performance-Based Fire Protection Rule

We support the staff recommendation described as Option 1, which includes provisions for plant-specific exemptions as permitted in the current regulations. However, we believe that exemptions under Option 1 should not be limited to those permitted by precedent.

Fire-analysis techniques have advanced substantially since the current fire protection regulations were promulgated. These advances justify a reexamination of the bases for granting exemptions. We recommend that, in the near term, the staff and industry work toward the development of generic guidelines for using performance-based approaches to justify exemptions.

We are advocates of risk-based regulation and therefore support the staff's plan, described in SECY-94-090, to develop risk-based and performance-oriented fire protection regulations and recommend that any such regulatory framework include consideration of fire risk during shutdown conditions.

Additional comments by ACRS Member Ivan Catton are presented below.

Sincerely,



T. S. Kress
Chairman

Additional Comments of ACRS Member Ivan Catton

While I agree with some of what is said in the above report, I do not understand why the implementation of Option 2 is considered to be so complex. The computational tools are available to support the selection of Option 2 as a means to resolve the Thermo-Lag issues without resorting to a large number of exemptions. There are examples of how this can be done. Further, most of what must be done will support the effort to achieve a performance-based fire protection regulation. I believe it is time to follow the lead of other countries (e.g., Sweden, Australia, and others) in moving toward realistic performance-based fire protection regulation.

References:

1. SECY-94-127 dated May 12, 1994, from James M. Taylor, Executive Director for Operations, NRC, for the Commissioners, Subject: Options for Resolving the Thermo-Lag Fire Barrier Issues
2. SECY-94-128 dated May 12, 1994, from James M. Taylor, Executive Director for Operations, NRC, for the Commissioners, Subject: Status of Thermo-Lag Fire Barriers
3. Memorandum dated March 18, 1994, from Samuel J. Chilk, Secretary, to J. Ernest Wilkins, Jr., ACRS Chairman, and James M. Taylor, EDO, Subject: Staff Requirements - Periodic Meeting with the ACRS, March 10, 1994

4. SFCY-94-090 dated March 31, 1994, from James M. Taylor, Executive Director for Operations, NRC, for the Commissioners, Subject: Institutionalization of Continuing Program for Regulatory Improvement
5. SECY-94-024 dated February 4, 1994, from James M. Taylor, Executive Director for Operations, NRC, for the Commissioners, Subject: Resolution of Issues Concerning Thermo-Lag Fire Barriers
6. SECY-93-143 dated May 21, 1993, from James M. Taylor, Executive Director for Operations, NRC, for the Commissioners, Subject: NRC Staff Actions to Address the Recommendations in the Report on the Reassessment of the NRC Fire Protection Program
7. Memorandum dated March 25, 1994, to Holders of Operating Licenses from Luis A. Reyes, Office of Nuclear Reactor Regulation, NRC, Subject: Fire Endurance Test Acceptance Criteria for Fire Barrier Systems Used to Separate Redundant Safe Shutdown Trains Within the Same Fire Area (Supplement 1 to Generic Letter 86-10, "Implementation of Fire Protection Requirements")
8. Letter dated March 4, 1994, from Alex Marion, Nuclear Management and Resources Council, to C. McCracken, Office of Nuclear Reactor Regulation, NRC, transmitting NUMARC Industry Application Guide to Evaluate Thermo-Lag Fire Barriers (Draft D)