

April 22, 1996

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

Dear Chairman Jackson:

SUBJECT: PROPOSED REVISIONS TO 10 CFR PARTS 50 AND 100 AND
PROPOSED REGULATORY GUIDES RELATING TO REACTOR SITE
CRITERIA

During the 430th meeting of the Advisory Committee on Reactor Safeguards, April 11-13, 1996, we reviewed the proposed revisions to reactor siting regulations and associated Regulatory Guides and Standard Review Plan sections. Our Subcommittee on Extreme External Phenomena reviewed this matter during a meeting on April 3, 1996. During this review, we had the benefit of discussions with representatives of the NRC staff, Westinghouse Electric Corporation, and the Nuclear Energy Institute. We also had the benefit of the document referenced.

The staff has proposed final revisions to 10 CFR Parts 50 and 100 and a new Appendix S to Part 50 that deal with both seismic and source term issues for future plants and sites. Many of the implementation details will be found in new Regulatory Guides and in Standard Review Plan sections. The existing requirements of 10 CFR Part 100 and its Appendix A will remain in effect for operating plants.

We recommend that the proposed final rule dealing with the seismic aspects be issued.

The proposed final rule requires that any individual, located at any point on the exclusion area boundary for any two-hour period following the postulated release of the fission products, not receive a radiation dose in excess of 25 rem total effective dose equivalent (TEDE). Similarly, an individual located at the outer boundary of the low population zone (LPZ), who is exposed to the radioactive cloud resulting from the release of the postulated fission products (during the entire period of its passage), not receive a dose in excess of 25 rem TEDE. Consistency within the body of NRC regulations is most desirable. We recommend that careful definitions of the TEDE limits that are mindful of organ dose weighting factors found in 10 CFR Part 20 be included in the final rule.

Radiological doses are to be evaluated over a two-hour period. The proposed final rule states that the evaluation should be over

the two-hour period of maximum dose. The Office of Nuclear Regulatory Research (RES) has a differing view and recommends that the proposed final rule be modified from any two-hour period after release of fission products (referred to as the "worst" two hours) to a period of two hours commencing with fuel failure (referred to as the "first" two hours). RES believes that the use of the worst two-hour period in the dose calculation is not justified by risk considerations and could lead to increased costs for future licensees with no commensurate gain in safety.

The staff supporting the proposed rule states that (1) the proposed licensing framework would provide a relaxation of engineered safety feature (ESF) performance requirements commensurate with updated source term and radiological insights, (2) the regulatory requirements for determination of in-containment radioactive material during the two-hour dose evaluation period would be consistent and capable of handling designs substantially different from those analyzed in NUREG-1465, "Accident Source Terms for Light-Water Nuclear Power Plants," (3) the analysis would be easy to perform and reproducible with confidence, and (4) the technical bases and analytical methods would be defensible. While the revised dose evaluation in 10 CFR 50.34 is intended for future plants, the staff is concerned that a current licensee might seek to use it to remove or disable existing fission product cleanup systems. This could markedly change the risk profile of the plant from that which was licensed.

We are not persuaded by the rationale provided by RES in favor of the first two-hour dose calculation. We agree with the position taken in the proposed final rule, and recommend that the rule and the associated Regulatory Guides and SRP sections be issued.

Sincerely,

/s/

T. S. Kress
Chairman

REFERENCE:

Memorandum dated March 6, 1996, from T. P. Speis, Office of Nuclear Regulatory Research, NRC, to J. T. Larkins, ACRS, transmitting Revisions to 10 CFR Part 100, Reactor Site Criteria, Revisions to 10 CFR Part 50, New Appendix S to Part 50 (Final Rules) and Associated Regulatory Guides and Standard Review Plan Sections

1. Memorandum dated June 19, 1995, from J. M. Taylor, Executive Director for Operations, NRC, to NRC Commissioners, transmitting Summary of Public Comments, 10 CFR Parts 50, 52 and 100, "Reactor Site Criteria Including Seismic and Earthquake Engineering Criteria for Nuclear Power Plants and Proposed Denial of Petition from Free Environment, Inc., et al.
2. Draft Paper for the Commissioners, from J. M. Taylor, Executive Director for Operations, NRC, Subject: Revisions to 10 CFR Part 100 and 10 CFR Part 50, and New Appendix S to 10 CFR Part 50
3. U. S. Nuclear Regulatory Commission, Federal Register Notice, Final Rule, 10 CFR Parts 50, 52 and 100, RIN 3150-AD93, Reactor Site Criteria, Including Seismic and Earthquake Engineering Criteria for Nuclear Power Plants and Proposed Denial of Petition from Free Environment, Inc., et al.
4. Resolution of Public Comments on the Proposed Seismic and Earthquake Engineering Criteria for Nuclear Power Plants, Section 100.23, Geologic and Seismic Siting Factors to 10 CFR Part 100 and Appendix S. Earthquake Engineering Criteria for Nuclear Power Plants to 10 CFR Part 50, October 17, 1994 Publication
5. Draft Regulatory Guide DG-4004, (The Second Proposed Revision 2 to Regulatory Guide 4.7) General Site Suitability, Criteria for Nuclear Power Stations, February 1995
6. Regulatory Guide 1.12, Revision 2, Seismic Instrumentation for Nuclear Power Plants
7. Comment Resolution, Regulatory Guide 1.12, Revision 2, Seismic Instrumentation for Nuclear Power plants
8. Regulatory Guide 1.12, Revision 2, Nuclear Power Plant Instrumentation for Earthquakes
9. Comment Resolution, Regulatory Guide 1.166, Pre-Earthquake Planning and Immediate Nuclear Power Plant Operator Postearthquake Actions
10. Regulatory Guide 1.167, Restart of a Nuclear Power Plant Shut Down by an Earthquake (was Draft DG-1035)
11. Comment Resolution, Regulatory Guide 1.167, Restart of Nuclear Power Plant Shut Down by an Earthquake
12. Regulatory Guide 1.165, Identification and Characterization of Seismic Sources and Determination of Safe Shutdown Earthquake Ground Motion
13. U. S. Nuclear Regulatory Commission, Standard Review Plan 2.5.1, Basic Geologic and Seismic Information, Revision 3
14. U. S. Nuclear Regulatory Commission, Standard Review Plan 2.5.2, Vibratory Ground Motion, REvision 3
15. U. S. Nuclear Regulatory Commission, Standard Review Plan 2.5.3, Surface Faulting, Revision 3
16. Resolution of Public Comments on Section 100.23 to Part 100 Guidance Documents, Regulatory Guide 1.165, Standard Review Plan Sections 2.5.1, 2.5.2, and 2.5.3

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