

Mr. Bob Christie
Performance Technology
P. O. Box 51663
Knoxville, Tennessee 37950-1663

SUBJECT: FINAL NRC ACTION ON PETITION FOR RULEMAKING PRM-50-68

Dear Mr. Christie:

In your letter to the NRC Commissioners dated October 7, 1999, supplemented by a letter to the NRC staff on November 9, 1999, you filed a petition for rulemaking requesting the Nuclear Regulatory Commission (NRC) to amend its regulations regarding hydrogen control systems at nuclear power plants. You stated that the current regulations for hydrogen control systems at some nuclear power plants are detrimental and present a health risk to the public. You also believe that similar detrimental situations may apply to other systems as well. You stated that your proposed amendments would eliminate those situations associated with hydrogen control systems that present adverse conditions at nuclear power plants. The petition was docketed as PRM-50-68 on November 15, 1999. On January 12, 2000, the NRC published a notice of receipt of this petition in the *Federal Register* (65 FR 1829). The notice summarized the issues in the petition and solicited public comments on those issues.

In your petition, you state that you performed a detailed review of the NRC staff's San Onofre Task Zero Safety Evaluation Report (Pilot Program for Risk-Informed Performance-Based Regulation), dated September 3, 1998, with respect to that plant's hydrogen control system. Based upon this review, you requested the NRC to amend its regulations in the following areas:

1. Retain the existing requirement for inerting the atmosphere of existing Mark I and Mark II containments.
2. Retain the existing requirement for hydrogen control systems in existing Mark III and PWR ice condenser containments to be capable of handling hydrogen generated by a metal-water reaction involving 75% of the fuel cladding.
3. Require all future light water reactors to postulate a 75% metal-water reaction (instead of the 100% required by the current rule) for analyses undertaken pursuant to §50.44(c).
4. Retain the existing requirements for high-point vents.
5. Eliminate the existing requirement in §50.44(b)(2) to insure a mixed atmosphere in containment.
6. Eliminate the existing requirement for hydrogen releases during design basis accidents of an amount equal to that produced by a metal/water reaction of 5% of the cladding.

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7. Eliminate the requirement for hydrogen recombiners or purging in light water reactor (LWR) containments.
8. Eliminate the existing requirements for hydrogen and oxygen monitoring in LWR containments.
9. Revise General Design Criterion 41, "Containment Atmosphere Cleanup", to require systems to control fission products and other substances that may be released into the reactor containment only for accidents where there is a high probability that fission products will be released to the reactor containment.
10. Additionally, you stated that during the San Onofre review, the NRC granted an exemption from the design basis requirements for the hydrogen control system based on information obtained from analysis of severe accidents. You stated that the NRC staff's evaluation indicated that adherence to the requirements for certain design basis accidents at San Onofre could have a detrimental effect on public health and safety. You believe that there may be other instances at facilities when adherence to design basis accident requirements could be detrimental to safety. Thus, you requested the NRC to issue an interim policy statement applicable to all NRC staff to ensure that the NRC Executive Director for Operations was promptly notified whenever the staff discovered cases when compliance with design basis accident requirements was detrimental to public health.

The Commission considered the issues you raised in your petition and the public comments received in conjunction with an ongoing effort to risk-inform the regulations for combustible gas control. Each of the issues raised in your petition is addressed in a final rule amending 10 CFR 50.44, "Combustible Gas Control in Containment." The Commission concluded that issues 1, 2, 6, and 7 above will be granted; issue 4 will be granted in part; and issues 3, 5, 8, 9, and 10 will be denied upon promulgation of the amended rules. Subheading V, "Petition for Rulemaking, PRM-50-68," of the enclosed *Federal Register* notice of the final rule contains a discussion of the issues in your petition and the Commission's resolution of each of those issues.

Sincerely,

Annette Vietti-Cook
Secretary of the Commission

Docket: PRM-50-71

Enclosure: Federal Register Notice