

the NRC staff how to proceed in instances when "adherence to design basis requirements would be detrimental to public health." The other commenters were silent regarding the request for an interim policy statement.

The NRC has evaluated the technical issues and the associated public comments and has determined that the specific issues contained in PRM-50-68 should be granted in part and denied in part as discussed in the following paragraphs.

**Issue 1:** Retain the existing requirement for inerting the atmosphere of existing Mark I and Mark II containments.

**Resolution of Issue 1:** Consistent with the petitioner's request, § 50.44(b)(2)(i) of the final rule retains the current requirement for inerting of existing Mark I and Mark II containments. The NRC's basis for this decision is provided in section III A. of this document.

**Issue 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 percent of the fuel cladding.

**Resolution of Issue 2:** Consistent with the petitioner's request, § 50.44(b)(2)(ii) of the final rule retains the above 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 percent of the fuel cladding. The NRC's basis for this decision is provided in section III A. of this document.

**Issue 3:** Require all future light water reactors to postulate a 75 percent metal/water reaction (instead of the 100 percent required by the current rule) for analyses under § 50.44(c).

**Resolution of Issue 3:** The NRC declines to adopt this request. For future water-cooled reactors, the final rule retains the previous requirement to postulate hydrogen generation by a 100 percent metal/water reaction when performing structural analyses of reactor containments under accident conditions. Future containments that cannot structurally withstand the consequences of this amount of hydrogen must be inerted or must be equipped with equipment to reduce the concentration of hydrogen during and following an accident. The NRC's basis for this decision is provided in section III E. of this document.

**Issue 4:** Retain the existing requirements for high point vents.

**Resolution of Issue 4:** Consistent with the petitioner's request, the requirements for high point vents in

former 10 CFR 50.44(c)(3)(iii) have been retained in the final rule, but have been modified slightly to clarify the acceptable use of these vents during and following an accident. Because the need for high point vents is relevant to ECCS performance during severe accidents and is not pertinent to combustible gas control, these high point venting requirements have been removed from 10 CFR 50.44 and relocated to 10 CFR 50.46a where the remaining requirements for ECCS are located. The basis for this decision is provided in section III F. of this document.

**Issue 5:** Eliminate the existing requirement in § 50.44(b)(2) to ensure a mixed atmosphere in containment.

**Resolution of Issue 5:** The NRC declines to adopt this request. The final rule retains the requirement for all containments to ensure a mixed atmosphere to prevent local accumulation of combustible or detonable gases that could threaten containment integrity or equipment operating in a local compartment. The NRC's basis for retaining this requirement is provided in section III A. of this document.

**Issue 6:** Eliminate the existing requirement for postulating design basis accident hydrogen releases of an amount equal to that produced by a metal/water reaction of 5 percent of the cladding.

**Resolution of Issue 6:** The NRC grants this request. The NRC has determined that hydrogen release during design basis accidents is not risk-significant because it does not contribute to the conditional probability of a large release of radionuclides up to approximately 24 hours after the onset of core damage. The NRC believes that accumulation of combustible gases beyond 24 hours can be managed by implementation of severe accident management guidelines. The NRC's technical basis for eliminating this requirement is discussed in greater detail in section III B. of this document.

**Issue 7:** Eliminate the requirement for hydrogen recombiners or purge in light-water reactor containments.

**Resolution of Issue 7:** The NRC grants this request. As noted in Issue 6 above, the NRC has determined that hydrogen release during design basis accidents is not risk-significant because it does not contribute to the conditional probability of a large release of radionuclides up to approximately 24 hours after the onset of core damage. The NRC believes that accumulation of combustible gases beyond 24 hours can be managed by implementation of severe accident management guidelines. Thus, hydrogen recombiners and hydrogen vent and

purge systems are not required. The NRC's basis for eliminating these requirements is discussed in greater detail in section III B. of this document.

**Issue 8:** Eliminate the existing requirements for hydrogen and oxygen monitoring in light-water reactor containments.

**Resolution of Issue 8:** The NRC declines to adopt this request. The final rule retains the existing requirement for monitoring hydrogen in the containment atmosphere for all plant designs. Hydrogen monitors are required to assess the degree of core damage during beyond design-basis accidents. Hydrogen monitors are also used in conjunction with oxygen monitors to guide licensees in implementation of severe accident management strategies. Also, the NRC has decided to codify the existing regulatory practice of monitoring oxygen in containments that use an inerted atmosphere for combustible gas control. If an inerted containment became de-inerted during a beyond design-basis accident, other severe accident management strategies, such as purging and venting, would need to be considered. Monitoring of both hydrogen and oxygen is necessary to implement these strategies. The NRC's bases for these requirements are discussed in greater detail in sections III C. and III D. of this document.

**Issue 9:** Revise GDC 41—Containment Atmosphere Cleanup—to require systems to control fission products and other substances that may be released into the reactor containment for accidents only when there is a high probability that fission products will be released to the reactor containment.

**Resolution of Issue 9:** The NRC declines to adopt the petitioner's request on this issue. The NRC believes that the amended rule alleviates the need to revise Criterion 41. In a December 4, 2001, letter from the petitioner to the NRC, the petitioner inferred that the intent of the proposed change was to focus Criterion 41 on the containment capability when a severe accident occurs. This concern is addressed in the final § 50.44 that establishes the design criteria for reactor containment and associated equipment for controlling combustible gas released during a postulated severe accident. The General Design Criteria in Appendix A of 10 CFR Part 50 were established to set the minimum requirements for the principal design criteria for water-cooled nuclear power plants. The postulated accidents used in the development of these minimum design criteria are normally design-basis accidents. The NRC believes it is not