

appropriate to address severe accident design requirements in the General Design Criteria.

*Issue 10:* The petitioner requested the NRC to issue an interim policy statement applicable to the NRC staff to ensure that the NRC Executive Director for Operations was promptly notified whenever the staff discovered cases where compliance with design-basis accident requirements was detrimental to public health.

*Resolution of Issue 10:* The petitioner's additional request for an interim policy statement is not part of the petition for rulemaking. Nevertheless, the NRC has evaluated the request and associated public comments and has concluded that hydrogen control requirements referenced by the petitioner have been modified in the final rule so that design basis requirements ensure adequate protection of public health and safety. The NRC also believes that if NRC staff members discover future situations when design basis requirements detract from safety, the staff will elevate these issues for management review; thus, no NRC staff guidance in this area is necessary.

#### *Petition for Rulemaking—PRM-50-71*

The NRC also received a petition for rulemaking submitted by NEI. The petition, dated April 12, 2000, was published in the **Federal Register** for public comment on May 31, 2000 (65 FR 34599). The petitioner requested that the NRC amend its regulations to allow nuclear power plant licensees to use zirconium-based cladding materials other than Zircaloy or ZIRLO, provided the cladding materials meet the requirements for fuel cladding performance and have been approved by the NRC staff. The petitioner believes the proposed amendment would improve the efficiency of the regulatory process by eliminating the need for individual licensees to obtain exemptions to use advanced cladding materials that have already been approved by the NRC.

Specifically, the petitioner states that the NRC's current regulations require uranium oxide fuel pellets, used in commercial reactor fuel, to be contained in cladding material made of Zircaloy or ZIRLO. The petitioner indicates that the requirement to use either of these materials is stated in § 50.44 and § 50.46. The petitioner notes that subsequent to promulgation of these regulations, commercial nuclear fuel vendors have developed and continue to develop materials other than Zircaloy or ZIRLO that the NRC reviews and approves for use in commercial power

reactor fuel. Each of these approvals requires the NRC to grant an exemption to the licensee that requests to use fuel with these cladding materials. The petitioner requests that the NRC amend its regulations to allow licensees discretion to use zirconium-based cladding materials other than Zircaloy or ZIRLO, provided that the cladding materials meet the fuel cladding performance requirements and have been reviewed and approved by the NRC staff. The petitioner notes that during the past nine years there have been at least eight requests for exemptions and that each exemption has cost more than \$50,000. The petitioner states that the requests for exemptions have become increasingly more frequent, causing significant administrative confusion and having a potentially adverse effect on efficient and effective use of NRC, licensee, and vendor resources.

The petitioner believes the NRC should amend § 50.44 and § 50.46 to allow the use of other zirconium-based alloys in addition to those specified in the current regulations. The petitioner states that the stated goal of the existing regulations is to ensure adequate cooling for reactor fuel in case of a design-basis accident. However, the petitioner asserts that the proposed amendment does not degrade the ability to meet that goal. The petitioner believes it removes an unwarranted licensing burden without increasing risk to public health and safety.

The NRC received 11 comment letters on PRM 50-71. Seven comments were from nuclear reactor licensees, two from individual members of the public, one from a nuclear reactor vendor and one from a nuclear industry trade association (NEI). Five of the nuclear reactor licensees were supportive of the petition and endorsed the comments and positions provided by NEI in their comments on the petition. One licensee stated that the proposed rule should note that if a fuel vendor's cladding has met the requirements for use on a generic basis, a process for the implementing utility to use that fuel under their existing license already exists. Another licensee agreed that industry needs relief on use of zirconium-based cladding, but because cladding is a critical safety barrier, the basis for relief should come from proven, in-reactor performance. A better approach would be to update the approved list of allowed fuel rod cladding materials as more products demonstrate reliable, in-reactor performance.

Two comments were received from individuals. One individual opposed

the petition because it did not contain the specific review and acceptance criteria that NRC would utilize when reviewing and approving future cladding materials under the proposed rule. The commenter also opposed the practice of allowing lead fuel assembly tests to demonstrate performance of new materials in commercial reactors before NRC approval, but also stated that long term performance testing of materials was necessary, must take into account any differences at individual utilities, and must consider future performance in dry cask storage systems. Another individual commented that the petition should be denied because the evaluations of cladding materials do not account for the realities of plant operation under normal conditions and the loss of coolant accident environment. This commenter stated that NRC approval of materials whose properties fell "within" acceptance criteria was unacceptable because an approval might be issued for a material whose properties were "right to the limit" without an adequate margin of safety. With respect to hydrogen generation, the commenter opposed generic approvals of new materials because site-specific material variations might yield unexpected results.

The nuclear reactor vendor supported adoption of the proposed rule changes published in the **Federal Register** and agreed with the suggested revision of § 50.46(e) proposed by NEI in its comments on the document. The vendor also recommended consideration of a direct final rule process to implement the petition. The NEI provided revised wording for proposed language in § 50.46(e) and urged the NRC to promulgate the revision as a direct final rule.

After evaluating the petition and public comments, the NRC has determined that the petition should be denied in part. The final § 50.44 rule has been written so that it does not refer to specific types of zirconium cladding; instead, the rule applies to all boiling and pressurized water reactors. When the NRC approves the use of boiling or pressurized water reactor fuel with other types of cladding, no exemptions from § 50.44 will be needed. Thus, even though the final rule does not contain the language specifically requested to be added by the petitioner, the rule accomplishes the petitioner's intended purpose with respect to § 50.44. Also, the NRC did not utilize the direct final rulemaking process because the other provisions being amended in § 50.44 were too complex to allow the promulgation of a direct final rule. The NRC is making no decision at this time