

New Nuclear Power Reactor Defenses against Airplane Attacks

Explanation of the Issue

On March 27, 2009, the NRC published a final rule requiring future holders of a new nuclear power reactor license to develop guidance and strategies intended to maintain or restore reactor core cooling, reactor containment and spent fuel pool cooling under circumstances associated with loss of large areas of the nuclear power plant due to explosion or fire. Applicants for a new nuclear power reactor license also must describe their plans for implementation of such guidance and strategies.

In addition, on June 12, 2009, the NRC published a final rule adding requirements for consideration of aircraft impacts for new nuclear power reactors. The aircraft impact rule requires a design-specific assessment of the effects of the impact of a large, commercial aircraft, and incorporation of design features and functional capabilities into the nuclear power reactor facility design. As a result, newly designed facilities should be inherently more robust against aircraft impacts than if the facilities were designed in the absence of this rule.

Status

The NRC issued draft regulatory guidance on the methodology for performing aircraft impact assessments (AIAs) in 2009. All combined license applicants have referenced in their applications one of the five reactor designs which is not yet certified. Each of these applicants used the above NRC draft regulatory guidance to develop its design-specific AIA. Design changes resulting from these assessments were submitted to the NRC

The NRC staff has completed its review of design changes for the Economic Simplified Boiling Water Reactor (ESBWR) design the Advanced Boiling Water Reactor (ABWR) design submitted by STP Nuclear Operating Company, and the Advanced Passive 1000 (AP1000) design and found that each of these designs meets the NRC's AIA rule. The NRC staff review of U.S. Evolutionary Power Reactor (U.S. EPR) and U.S. Advanced Pressurized Water Reactor (US-APWR) AIA design changes is in progress.

The NRC staff is revising its draft AIA methodology guidance to incorporate lessons learned during NRC review and inspection of the first three AIAs. The final guidance is expected to be issued in June 2011.

The NRC issued the final interim staff guidance on June 9, 2010, for its review of information submitted by new reactor license applicants that address the requirements pertaining to loss of large areas of the nuclear power plant due to explosion or fire. The NRC expects to include it in the NRC's Standard Review Plan for nuclear power reactors during the next formal update of the document.

Relevant Additional Information

None provided.