REGULATORY ANALYSIS

DRAFT REGULATORY GUIDE DG-1313
Protection Against Extreme Wind Events and Missiles for Nuclear Power Plants
(Proposed Revision 2 of Regulatory Guide 1.117, dated April 1978)

1. Statement of the Problem

The U.S. Nuclear Regulatory Commission (NRC) is considering revising Regulatory Guide 1.117 to address new issues identified since the NRC originally issued the guide. The NRC published Revision 1 of Regulatory Guide 1.117, "Tornado Design Classification," in April 1978 to provide licensees and applicants with a method acceptable to the NRC staff for identifying those structures, systems, and components of light-water-cooled reactors that should be protected from the effects of the Design Basis Tornado, including tornado missiles, and remain functional. Nuclear power plants must be designed so that they remain in a safe condition under extreme meteorological events, including those that could result in the most extreme wind events (tornadoes and hurricanes) that could reasonably be predicted to occur at the site. Tornado wind speeds may not bound hurricane wind speeds for certain portions of the Atlantic and gulf coasts at the wind speed frequencies of occurrence considered in RG 1.76, "Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants." The structures, systems, and components (SSCs) should be designed to withstand the effects of the design basis hurricane and hurricane generated missiles and remain functional. RG 1.221, "Design-Basis Hurricane and Hurricane Missiles for Nuclear Power Plants," does not identify the SSCs. This regulatory guide describes an approach that the staff of the NRC considers acceptable for identifying those structures, systems, and components of light water cooled reactors that should be protected from the effects of the worst case extreme winds and wind-generated missiles, and remain functional. The NRC will also address these extreme conditions on a case by case basis.

2. Objective

The objective of this regulatory action is to update NRC guidance and provide applicants with a method to demonstrate compliance with General Design Criterion 2, "Design Bases for Protection against Natural Phenomena," of Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities."

3. Alternative Approaches

The NRC staff considered the following alternative approaches:

1. Do not revise Regulatory Guide 1.117

2. Withdraw Regulatory Guide 1.117

3. Revise Regulatory Guide 1.117 to address the current methods and procedures.

Alternative 1: Do Not Revise Regulatory Guide 1.117

Under this alternative, the NRC would not revise [or issue additional] guidance, and the current guidance would be retained. If NRC does not take action, there would not be any changes in costs or benefit to the public, licensees or NRC. However, the "no-action" alternative would not address identified concerns with the current version of the regulatory guide [or in the absence of NRC guidance, for a new guide]. The NRC would continue to review each application on a case-by-case basis. This alternative is considered the "no-action" alternative and provides a baseline condition from which any other alternatives will be assessed.

Alternative 2: Withdraw Regulatory Guide 1.117

Under this alternative the NRC would withdraw this regulatory guide. This would eliminate the problems identified above regarding the regulatory guide. It would also eliminate the only readily available description of the methods the NRC staff considers acceptable for demonstrating compliance with General Design Criterion 2, Appendix A, to 10 CFR Part 50. Although this alternative would be less costly than the proposed alternative, it would impede the public's accessibility to the most current regulatory guidance.

Alternative 3: Revise Regulatory Guide 1.117

Under this alternative, the NRC would revise Regulatory Guide 1.117. This revision would incorporate the latest information in RG 1.117, supporting guidance, and review practices. By doing so, the NRC would ensure that the RG guidance available in this area is current, and accurately reflects the staff's position.

The impact to the NRC would be the costs associated with preparing and issuing the regulatory guide revision. The impact to the public would be the voluntary costs associated with reviewing and providing comments to NRC during the public comment period. The value to NRC staff and its applicants would be the benefits associated with enhanced efficiency and effectiveness in using a common guidance document as the technical basis for license applications and other interactions between the NRC and its regulated entities.

Conclusion

Based on this regulatory analysis, the NRC staff concludes that revision of Regulatory Guide 1.117 is warranted. The action will enhance protection of SSCs important to safety from the effects of extreme wind events.