

# REGULATORY ANALYSIS

## **Regulatory Guide 1.221, “Design-Basis Hurricane and Hurricane Missiles for Nuclear Power Plants.” (New Regulatory Guide)**

### **Statement of the Problem**

This is a new regulatory guide that provides information about design-basis hurricane windspeeds and design-basis hurricane missiles. Before the publication in March 2007 of Revision 1 of Regulatory Guide 1.76 (RG 1.76), “Design-Basis Tornado for Nuclear Power Plants,” the staff considered the maximum design-basis tornado windspeed as the upper bound for nuclear power plant design-basis. Since design-basis tornado windspeeds were decreased as a result of the analysis performed to update RG 1.76, design-basis tornado windspeeds may not bound design-basis hurricane windspeeds in all areas of the United States. The proposed new regulatory guide addresses maximum probable hurricane windspeeds and hurricane-generated missiles for those regions.

### **Objective**

The objective of this regulatory action is to issue a new regulatory guide providing design-basis hurricane windspeeds and hurricane-generated missiles.

### **Alternative Approaches**

The U.S. Nuclear Regulatory Commission (NRC) staff considered the following alternative approaches:

Do not issue a new regulatory guide.

Issue a new regulatory guide (based on draft regulatory guide (DG)-1247).

#### Alternative 1: Do Not Issue a New Regulatory Guide

Under this alternative, the NRC would not issue a new regulatory guide to provide design-basis hurricane windspeeds and hurricane-generated missiles. If the NRC does not take action, there will be no changes in the cost or benefit to the public, applicants, or the NRC. This alternative is considered the baseline or “no action” alternative. The impact of this alternative is that applicants will lose the benefit of the staff’s perspectives and guidance on acceptable solutions to protect new nuclear power plants from hurricane-related meteorological events. If the new regulatory guide is not issued, new plants designed to the criteria in Revision 1 to RG 1.76 may not be designed adequately to prevent undue risk to public health and safety if the design-basis tornado windspeeds and tornado-generated missiles do not bound the design-basis hurricane windspeeds and hurricane-generated missiles proposed in DG-1247.

#### Alternative 2: Issue a New Regulatory Guide (based on DG-1247)

Under this alternative, the NRC will issue a new regulatory guide (based on DG-1247) to provide applicants for new plants with guidance that the staff considers acceptable for use in selecting the design-basis hurricane windspeeds and hurricane-generated missiles that a new nuclear power plant should be designed to withstand to prevent undue risk to public health and safety. The impact to the NRC will be the costs associated with preparing and issuing the new guide. The impact to the public will be the voluntary costs associated with reviewing and providing comments to NRC during the public comment period.