

# REGULATORY ANALYSIS

## **DRAFT REGULATORY GUIDE DG-1280 DESIGN, INSPECTION, AND TESTING CRITERIA FOR AIR FILTRATION AND ADSORPTION UNITS OF NORMAL ATMOSPHERE CLEANUP SYSTEMS IN LIGHT-WATER-COOLED NUCLEAR POWER PLANTS (Proposed Revision 3 of Regulatory Guide 1.140, dated June 2001)**

### **Statement of the Problem**

Since the U.S. Nuclear Regulatory Commission (NRC) issued Revision 2 of Regulatory Guide (RG) 1.140, “Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Normal Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants,” in June 2001, The American Society of Mechanical Engineers (ASME) Committee on Nuclear Air and Gas Treatment (CONAGT) has revised and expanded the scope of equipment covered by ASME-AG-1, “Code on Nuclear Air and Gas Treatment,” which the staff previously endorsed RG 1.140. The revision to ASME-AG-1b consolidated some requirements from ASME-N509, “Nuclear Power Plant Air Cleaning Units and Components”; ASME-N510, “Testing of Nuclear Air-Treatment Systems”; and other documents previously endorsed by the staff in RG 1.140. In addition, CONAGT has developed and published a new standard, ASME N511-2007, “Inservice Testing of Nuclear Air Treatment, Heating Ventilation and Air Conditioning Systems.” This new standard provides comprehensive test and inspection requirements and is written to complement the expanded ASME-AG-1b.

Therefore, revision of this regulatory guidance is necessary to address these changes to the referenced industry standards.

### **Objective**

The objective of this regulatory action is to provide more current guidance that addresses the latest industry standards on nuclear air and gas treatment for normal atmosphere filter systems.

### **Alternative Approaches**

The NRC staff considered the following alternative approaches:

Do not revise RG 1.140.

Withdraw RG 1.140 leaving applicants and licensees to propose their own methods of implementation, with the more comprehensive RG 1.52, “Design, Inspection and Testing Criteria for Air Filtration and Adsorption Units of Post-Accident Engineered-Safety-Feature Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants,” remaining available.  
Revise Regulatory Guide 1.140.

#### Alternative 1: Do Not Revise RG 1.140

Under this alternative, the NRC would not revise 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 the NRC. However, the “no-action” alternative would not address the latest editions of the previously endorsed codes and standards. The NRC would continue to review each application that uses

newer edition codes and standards not endorsed by RG 1.140 revision 2 on a case-by-case basis. This alternative maintains the same baseline condition from which other alternatives would be assessed.

#### Alternative 2: Withdraw RG 1.140

Under this alternative, the NRC would withdraw RG 1.140 with the justification that RG 1.52 provides acceptable methods for implementation from which Regulatory Guide 1.140 is considered a subset.

One benefit of this action would be to reduce the number of Regulatory Guides by one, with the attendant reduction in review and NRC administrative processing requirements.

However, it is anticipated that a significant number of licensees and applicants would prefer to keep guidance specifically focused on safety-related systems separate from guidance focused on similar, but non-safety-related systems.

#### Alternative 2: Revise RG 1.140

Under this alternative, the NRC would revise RG 1.140, taking into consideration the newer codes and standards.

One benefit of this action is that it would enhance the reviews of new reactor (or materials facilities that may choose to use the guidance) applications that reference newer editions of industry codes from those endorsed by RG 1.140 Revision 2. Staff reviewers would not need to issue requests for additional information to reconcile submitted design information to the current guidance.

The impact to the NRC would be the costs associated with preparing and issuing the revised RG. 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 recommends revision of RG 1.140. The staff concludes that the proposed action will enhance the efficiency of application reviews. It could also lead to cost savings for the industry, especially with regard to applications for standard plant design certifications and combined licenses.