

**Regulatory Guide Periodic Review**

Regulatory Guide Number: **1.142, Revision 2**

Office/Division/Branch: **RES/DE/SGSEB**

Title: **Safety-Related Concrete Structures for Nuclear Power Plants  
(Other than Reactor Vessels and Containments)**

Technical Lead: **Madhumita Sircar**

Recommended Staff Action: **Revise**

**1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?**

RG 1.142, Revision 2, describes methods that the staff of the U.S. Nuclear Regulatory Commission considers acceptable for complying with NRC regulations in the design, evaluation, and quality assurance of safety-related concrete structures excluding concrete reactor vessels and concrete containment. RG 1.142 was last revised in 2001.

The guide endorses the ACI 349-1997 with certain exceptions as an acceptable means of complying with NRC regulations. ACI 349 was last revised in 2013 and published in June 2014. The RG needs to be updated to address the latest revised version of ACI 349.

The Quality Assurance requirements incorporated into RG 1.142 by endorsement of ASME/NQA-2-1983 have also been revised. NQA-2 was combined into NQA-1, Part II, "Quality Assurance Requirements for Nuclear Facility Applications" as discussed in RG 1.28 Revision 4.

**2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?**

There are no license applications for large commercial nuclear power plants anticipated in the near future (next three to five years) that would require the guidance found in RG 1.142. For small modular reactors, only one application is anticipated in the next several years. Because of the size and nature of small modular reactors there are no changes anticipated for the methodology that would impact small modular reactor licensing.

**3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contract resources?**

NRC staff requires approximately 0.5 FTE to complete revision of the regulatory guide.

- 4. Based on the answers to the questions above, what is the staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?**

Revise

- 5. If a RG should be revised, provide a conceptual plan and timeframe to accomplish this.**

The work is planned to start in third quarter of 2015. The staff plans to develop a draft RG by fourth quarter of 2015 and issue it for public comment by second or third quarter of 2016.

**NOTE: This review was conducted in January 2015 and reflects the staff's plans as of that date. These plans are tentative and are subject to change.**