

Regulatory Guide Periodic Review

Regulatory Guide Number: 1.107, Revision 2

Title: Qualification for Cement Grouting for Prestressing Tendons in Containment Structures

Office/division/branch: RES/DE/SGGEB
Technical Lead: Ramón L. Gascot

Staff Action Decided: Reviewed with issues identified for future consideration

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

RG 1.107, Revision 2 (Rev.2) "Qualification for Cement Grouting for Prestressing Tendons in Containment Structures" published in June 2011, describes the method that the NRC staff considers acceptable for the use of portland cement grout as the corrosion inhibitor for prestressing tendons in prestressed concrete containments. This guide also provides quality standards for using portland cement grout to protect steel from corrosion. The recommendations of this guide are applicable when portland cement grout is used as the corrosion inhibitor for the highly stressed tendons of prestressed concrete containment structures. The recommendations of this guide are not intended for use in relation to the grout for foundation anchors.

RG 1.107 endorses with exceptions the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section III, Division 2, 2001 edition through 2003 Addenda, "Code for Concrete Reactor Vessels and Containments," and the 2001 "Guide Specification for Grouting of Post-Tensioned Structures," 1st Edition of the Post-Tensioning Institute/American Segmental Bridge Institute. Subsequently both have been revised. The most recent version of the former is 2015 and the latter 2012. Ultimately RG 1.107 should be updated in light of these revised standards.

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?

This guide is applicable to BWR and PWR concrete containment buildings. There are no new applications for these designs anticipated in the near future (approximately the next three to five years), and there is only one operating plant that uses grouted post tensioned tendons. Therefore there is no immediate impact if the guide is not revised at this time.

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

Approximately 0.25 FTE of the NRC staff time would be required to complete a revision/update of the RG 1.107.

- 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)?**

Reviewed with issues identified for future consideration.

- 5. Provide a conceptual plan and timeframe to address the issues identified during the review.**

The NRC staff plans to complete a detailed evaluation of the updated endorsed codes and standards, including a determination of the need to revise RG 1.107, in approximately two years' time.

NOTE: This review was conducted in August, 2016 and reflects the staff's plans as of that date. These plans are tentative and are subject to change.