

Regulatory Guide Periodic Review

Regulatory Guide Number: **1.12**

Revision: **2**

Title: **Nuclear Power Plant Instrumentation for Earthquakes**

Office/Division/Branch: **NRO/DSEA/RGS1**

Technical Lead: **Vladimir Graizer**

Staff Action Decided: **Revise**

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

The current revision of RG 1.12 dates to 1997 and significant technological advances in seismic instrumentation have since been made that warrant revising this RG. In addition, lessons learned from the recent earthquakes that impacted the North Anna and Fukushima-Dai-ichi nuclear power plants indicate a need to update seismic instrumentation guidance relative to instrument characteristics, locations, installation, and maintenance. Updating this RG becomes important when operating nuclear power plants begin replacement of older existing instrumentation as the equipment ages. Since this RG provides instrumentation criteria for addressing the need for plant shutdown after an earthquake, the impact of not updating instrumentation guidance for exceeding the OBE could be significant in light of recent earthquake experience.

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 new power reactor license applications anticipated in the near future (next 3 to 5 years). Thus, there is no immediate need for revising the guide at this time to address their licensing. For small modular reactors, one application is anticipated in the next two years. However, for those operating power plants needing to replace existing instrumentation, the impact of not updating the guidance within the next several years could be significant.

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?

Updating will require approximately 0.2 FTE of NRC staff time.

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.**

Revisions to the RG are currently in progress. The staff expects to release a draft RG for public comment in Quarter 4 of 2015.

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