

## **Regulatory Guide Periodic Review**

Regulatory Guide Number: **1.125, Revision 2**

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

Title: **Physical Models for Design and Operation of Hydraulic Structures and Systems for Nuclear Power Plants**

Technical Lead: Ramon L. Gascot and John Burke

Recommended Staff Action: **Reviewed with issues for future revision**

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

Regulatory Guide (RG) 1.125, Revision 2 (Rev. 2), "Physical Models for Design and Operation of Hydraulic Structures and Systems for Nuclear Power Plants," issued in March 2009, describes the details and documentation of data and studies that an applicant should include in the preliminary or final safety analysis report (PSAR/FSAR) to support the use of physical hydraulic model testing for predicting the performance of hydraulic structures and systems for nuclear power plants. The required information in the RG embraces a detailed description of the model, justification for it, expected results, a schedule, and reporting requirements. The NRC staff has identified minor technical issues in the format of the RG, neither one related with safety concerns. Therefore, a complete revision is not required. However, a simple change in the format, specifically in the Regulatory Position 2 would make the Regulatory Guide 1.125 easier to understand.

**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 large 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, at least one application is anticipated in the next two years and there is no expectation that a physical model will be used when it can be done over a wider variety of parameters at less expense via computer simulations.

**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 the documentation and incorporate the computer model requirements to the RG 1.125. The process of adding guidance on computer models to the RG would not require a significant effort, due to the similarities in requirements with the physical models.

- 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)?**

The RG has been reviewed and issues identified for future consideration. However, there will be no major impact, if RG 1.125 is not updated at this time. For a future revision it is recommended that the use of computer models systems could be added as another way to model hydraulic structures. This action will provide another dimension to the RG and could increase the usefulness of it.

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

N/A

**NOTE: This review was conducted in September 2014 and reflects the staff's plans as of that date. These plans are tentative and subject to change.**