

## **Regulatory Guide Periodic Review**

Regulatory Guide Number: **1.102, Revision 1**

Title: **Flood Protection for Nuclear Power Plants**

Office: **RES/DRA/ETB**

Technical Lead: **Jacob Philip**

Recommended Staff Action: **Revise**

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

Regulatory Guide 1.102, Revision 1, "Flood Protection at Nuclear Power Plants," was issued in September 1976, and establishes the NRC's position for an acceptable approach for flood protection at nuclear power plants (NPP).

The Guide is in the process of revision to update, (i) references on new design and construction criteria for passive flood protection features, (ii) information on active flood protection features such as seals for penetrations, flood doors, site drainage features, (iii) information on temporary barriers, e.g., sand bags, flood walls, (iv) human factors aspects for flood mitigation and prevention and (v) information from Interim Staff Guidance (ISG) developed for the Fukushima flooding related issues. The revised guide will be applicable to new reactors only.

**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.

**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?**

The technical basis document for revision the RG has been provided to the NRC. This guide is being revised and will entail 0.5 FTE's. Research on the performance of flood Protection Seals and Human Factors for flood prevention and mitigation is being initiated (1<sup>st</sup> quarter 2014). As information is gleaned from these studies, they will be incorporated in the revised guide as needed.

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. The RG is undergoing revision.

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

The technical basis document for revision the RG has been provided to the NRC and the guide is undergoing revision. The staff anticipates completing a draft version at the beginning of Quarter 2 of FY 2015 with an expected release for public comment early in Quarter 4 of FY 2015. Complementary research on the performance of flood protection seals and human factors for flood prevention and mitigation is being initiated in Quarter 1, FY 2015. As information is gleaned from these studies, it will be incorporated in the guide's revision as appropriate.

**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.**