

Regulatory Guide Periodic Review

Regulatory Guide Number: **1.167**

Title: **Restart of a Nuclear Power Plant Shut Down by a Seismic Event**

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

Technical Lead: **Thomas Weaver**

Recommended Staff Action: **Revise**

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

Regulatory Guide 1.167, "Restart of a Nuclear Power Plant Shut Down by a Seismic Event" issued March 1997 endorses, in part, Electric Power Research Institute guidance on nuclear power plant response to an earthquake (EPRI NP-6695). Due to seismic events that resulted in the shutdown of nuclear power plants in Japan and the United States, the International Atomic Energy Agency (IAEA, 2011) and the Electric Power Research Institute (EPRI, 2012) have developed and updated guidance documents on the response and restart of nuclear plants following a seismic event. This updated guidance and NRC staff experience associated with restart of the North Anna nuclear power plant need to be reflected in an updated regulatory guide.

Due to the potential safety issues and costs associated with restarting a nuclear reactor following shutdown due to a seismic event, it is imperative that the US NRC provide up to date guidance to assist staff and licensees in the orderly assessment of plant performance and safety following seismic shaking and the subsequent restart process. Institutional knowledge gained through the experiences related to restart of the North Anna nuclear power plant may be lost over time. As a result, staff response to future events may not be as effective and efficient if this knowledge is not incorporated into the RG.

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

In terms of licensing activities, there are no new large power reactor license applications anticipated in the near future (next 3 to 5 years). 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?

Revision of the RG will take approximately 0.3 FTE of NRC staff time.

- 4. Based on the answers to the questions above, what is the recommended 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.**

1. Identify the portions of RG 1.167 requiring attention.
2. Identify dependencies between any items both within the RG itself as well as between other RGs.
3. Determine which technical problems have already been addressed in other RGs.
4. For technical problems that remain unaddressed, perform necessary literature review or calculations to satisfy the problem.
5. Review the revised RG to ensure agency standards are met.
6. Transmit to the Regulatory Guidance and Generic Issues Branch for processing approximately October 2015.

- 6. References:**

EPRI NP-6695 (1989), "Guidelines for Nuclear Power Plant Response to an Earthquake."

IAEA (2011). "Earthquake Preparedness and Response for Nuclear Power Plants", Safety Reports Series No. 66.

EPRI (2012). "Guidelines for Nuclear Plant Response to Earthquake," 1025288, Technical Update.

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