

REGULATORY ANALYSIS

REGULATORY GUIDE 1.79.1

INITIAL TEST PROGRAM OF EMERGENCY CORE COOLING SYSTEMS FOR BOILING-WATER REACTORS

(Draft was issued as DG-1277, dated June 2012)

1. Statement of the Problem

The U.S. Nuclear Regulatory Commission (NRC) issued Draft Regulatory Guide (DG)-1277 to ensure that Boiling-Water Reactors (BWRs) licensed under the requirements of Title 10 of the Code of Federal Regulations (10 CFR), Part 50, properly test emergency core cooling systems (ECCSs) before conducting normal operations in accordance with technical specifications. This new RG is necessary to address new BWR initial plant tests of design certification (DC) and combined license (COL) designs on using the requirements in 10 CFR Part 52. Some operating experience changes were also added to detect ECCS component failures before plant startup begins.

Therefore, revision of this regulatory guidance is necessary to address these changes to the referenced industry standards.

2. Objective

The objective of this new RG is to provide additional staff guidance to 10 CFR Part 52 applicants for the development of an acceptable initial test program (ITP).

3. Alternative Approaches

The NRC staff considered the following alternative approaches:

- (1) Do not issue RG 1.79.1
- (2) Issue RG 1.79.1

3.1 Alternative 1: Do Not Revise RG 1.79.1

Under this alternative, the NRC would not revise guidance, and the current guidance would be retained. If the NRC does not take action, there would be no changes in costs or benefit to the public, licensees, or the NRC. However, the “no action” alternative would not address current regulatory practice.

3.2 Alternative 2: Withdraw RG 1.79

Under this alternative the NRC would withdraw this RG. It would also eliminate a readily available description of methods that the NRC staff considers acceptable for new pressurized-water reactor preoperational testing of design certification and combined license design information using the requirements in 10 CFR Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants.” The NRC also added some operating experience changes to detect ECCS component failures before plant startup begins.

3.3 Alternative 3: Revise RG 1.52

Under this alternative, the NRC would revise RG 1.79, taking into consideration some operating experience changes to detect ECCS component failures before plant startup begins.

The NRC developed this regulatory guide to achieve the objective outlined above, and it is consistent with current regulatory practice. The benefit of this action is that it would enhance reactor safety for new reactors licensed under 10 CFR Part 52. The value to the NRC staff and its applicants would be the benefits associated with enhanced efficiency and effectiveness in using a common guidance document as the technical basis for license applications and other interactions between the NRC and its regulated entities.

The impact to the NRC would be the costs associated with preparing and issuing the revised RG. The impact to the public would be the voluntary costs associated with reviewing and providing comments to the NRC during the public comment period. The value to the NRC staff and its applicants would be the benefits associated with enhanced efficiency and effectiveness in using a common guidance document as the technical basis for license applications and other interactions between the NRC and its regulated entities.

4. Conclusion

The NRC should issue this regulatory guide to improve the licensing process. The NRC staff concluded that the proposed action will enhance reactor safety and reduce regulatory burden on both the NRC and its licensees and will result in an approved and more uniform process for implementing the preoperational testing for ECCS systems. It could also lead to cost savings for the nuclear industry, especially for standard plant design certification and combined license applications.