REGULATORY ANALYSIS

DRAFT REGULATORY GUIDE DG-1353
GUIDANCE FOR A TECHNOLOGY-INCLUSIVE, RISK-INFORMED, AND PERFORMANCE-BASED APPROACH TO INFORM THE CONTENT OF APPLICATIONS FOR LICENSES, CERTIFICATIONS, AND APPROVALS FOR NON-LIGHT-WATER REACTORS

(Proposed new regulatory guide)

1. Statement of the Problem

The U.S. Nuclear Regulatory Commission (NRC) is considering issuing a new Regulatory Guide to provide designers, applicants, and licensees of non-light-water reactors (non-LWRs) guidance for developing applications required by Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50 "Domestic Licensing of Production and Utilization Facilities," and Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants."

The requirements in 10 CFR 50.34, 52.47, 52.79, 52.137 and 52.157 state that an application for a construction permit, operating license, design certification, combined license, standard design approval, or manufacturing license respectively, must include a safety assessment of the facility, describe the safety features engineered into the facility, and information describing appropriate programmatic controls for design, construction, and operation of the facility. This draft guide proposes to endorse the principles and methodology in NEI 18-04, "Risk-Informed Performance-Based Guidance for Non-Light Water Reactor Licensing Basis Development," as one acceptable method for determining the appropriate scope and level of detail for parts of applications for licenses, certifications, and approvals for non-LWRs. NEI 18-04 outlines an approach for use by reactor developers to select licensing basis events; classify structures, systems and components (SSCs): determine special treatments and programmatic controls: and assess the adequacy of a design in terms of providing layers of defense in depth. The methodology described in NEI 18-04 and the draft guide also provides a general methodology for identifying an appropriate scope and depth of information to be provided in applications for licenses, certifications, and approvals.

2. Objective

The objective of this regulatory action is provide guidance for designing, assessing safety features, and developing applications for non-LWRs required by 10 CFR Parts 50 and 52.

3. Alternative Approaches

The NRC staff considered the following alternative approaches:

1. Do not develop regulatory guidance (DG-1353)
2. Develop regulatory guidance (DG-1353)

Alternative 1: Do Not Develop DG-1353

Under this alternative, the NRC would not develop guidance, and the current guidance, which was developed for LWR designs, would be retained. If NRC does not take action, there would not be any changes in costs or benefit to the public, licensees or NRC. However, the "no-action" alternative would not address how the current LWR-focused guidance could be adapted to address the unique design features related to non-LWR technologies. Each applicant for a non-LWR design or facility would prepare applications and the NRC would review each application on a case-by-case basis, which would extend the time required to prepare and review each application and potentially result in excessive costs and delays in licensing non-LWRs. This alternative is considered the "no-action" alternative and provides a baseline condition from which any other alternatives will be assessed.

Alternative 2: Develop DG-1353

Under this alternative, the NRC would develop DG-1353. This initial issuance would provide designers, applicants, and licensees of non-LWRs guidance for identifying licensing basis events, classifying SSCs and performance criteria, and assessing defense in depth to support applications required by 10 CFR Parts 50 and 52. By doing so, the NRC would ensure that the guidance available in this area is current, and accurately reflects the staff's position.

The impact to the NRC would be the costs associated with preparing and issuing the new regulatory guide endorsing the guidance in NEI 18-04. The impact to the public would be the voluntary costs associated with reviewing and providing comments to NRC during the public comment period. The value to 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.

Conclusion

Based on this regulatory analysis, the NRC staff concludes that issuance of a new regulatory guide is warranted. The action will enhance the ability of non-LWR designers, applicants, and future licensees to prepare applications for their new and innovative designs. It could also lead to cost savings for the industry and time savings for the NRC staff, especially with regard to developing or reviewing an application for a construction permit, operating license, design certification, combined license, standard design approval, or manufacturing license associated with a non-LWR design.