

REGULATORY GUIDE PERIODIC REVIEW

Regulatory Guide Number: 8.19, Revision 1

Title: Occupational Radiation Dose Assessment in Light-Water Reactor Power Plants – Design Stage Man-Rem Estimates

Office/Division/Branch: NRR/DRA/ARCB

Technical Lead: Edward Stutzcage

Subject: Reviewed with issues identified for future consideration

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

Regulatory Guide (RG) 8.19 was issued in 1979 to describe a method acceptable to the U.S. Nuclear Regulatory Commission (NRC) staff for performing an assessment of collective occupational radiation dose to meet the requirements for the “As Low as is Reasonably Achievable” program in Title 10 of *Code of Federal Regulations* (CFR) Part 20, “Standards for Protection Against Radiation,” and in 10 CFR Part 50.34, “Contents of Applications; Technical Information.”

RG 8.19 is still generally consistent with the requirements in 10 CFR Part 20, 10 CFR Part 50.34, and the guidance provided in RG 1.70, “Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants (LWR Edition);” RG 1.206, “Applications for Nuclear Power Plants;” and NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition.” However, some of the references and examples in the guide are outdated. References to some regulations and guidance documents need to be updated to account for updates to 10 CFR Part 20 and the addition of 10 CFR Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants.” In addition, updating examples and terminology may be warranted. For example, the term “man-rem” should to be changed to the revised term “person-rem.”

In addition, while examples are given specific to light-water reactors, the general guidance of performing dose assessments for new nuclear power reactors would apply to all power reactors and not only light-water reactor power plants. Therefore, consideration should be given to specifying that the guide applies to all power reactor applications and not only light-water reactor applicants.

The majority of these changes are administrative in nature and do not affect the technical content of the guide or what is expected from licensees or applicants in performing design stage dose estimates.

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?**

An RG update would only benefit new reactor applications and there are a limited number of applications expected over the next several years. In addition, the current guidance continues to provide an acceptable way to meet NRC requirements for applicants. Therefore, there would be little overall impact of not updating the RG.

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 would take between 0.1 FTE and 0.15 FTE. No contractor support is anticipated.

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)?**

Reviewed with potential updates identified for future consideration. The staff will evaluate the need to revise the RG during the next periodic review.

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

With a limited number of new reactor applications expected in the coming years and with current guidance that continues to provide an acceptable means to meet NRC requirements, the staff does not believe that a RG update is justified at this time.

NOTE: This review was conducted in April 2021 and reflects the staff's plans as of that date. These plans are subject to change.