UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 9, 2018

Dr. Michael L. Corradini, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: RESPONSE TO THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS' LETTER REGARDING REGULATORY GUIDE 1.232, "GUIDANCE FOR DEVELOPING PRINCIPAL DESIGN CRITERIA FOR NON-LIGHT-WATER REACTORS," DATED MARCH 26, 2018

Dear Dr. Corradini:

I am responding to your letter dated March 26, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18081A306), in which the Advisory Committee on Reactor Safeguards (ACRS) provided its findings and recommendations concerning the U.S. Nuclear Regulatory Commission Regulatory Guide 1.232 (RG 1.232), "Guidance for Developing Principal Design Criteria for Non-Light-Water Reactors" (ADAMS Accession No. ML17325A611).

The staff appreciates the Committee's support for issuing RG 1.232. In its letter, the Committee noted that the new design criteria in RG 1.232 were well developed and presented. Although individual ACRS members preferred certain specific changes, the overall product was sound. The Committee especially appreciated that the regulatory guide memorializes staff rationale for each advanced reactor, sodium-cooled fast reactor, and modular high temperature gas-cooled reactor design criteria within the body of the regulatory guide, as this will be invaluable to future applicants and regulators.

The Committee also noted that the advanced reactor, sodium-cooled fast reactor, and modular high temperature gas-cooled reactor design criteria in the appendices to the regulatory guide may not be appropriate to a specific design (even if it is a variant of the sodium-cooled fast reactor or modular high temperature gas-cooled reactor), and compliance may be difficult to demonstrate, since there is limited operating experience. The staff made changes to RG 1.232 in order to clarify that the design criteria for sodium-cooled fast and modular high temperature gas cooled reactors was based on currently available information and that not all criteria may apply to different future designs.

During the review of the applicant's submittal, the staff would address the appropriateness of the principal design criteria to any specific design. The staff would also consider relevant operating experience as part of its review. This is addressed in RG 1.232 in several places. On page 7, paragraph 2 the RG states, "It is the applicant's responsibility to develop the PDC [principal design criteria] for its facility based on the specifics of its unique design, using the GDC [general design criteria], non-LWR [non-light water reactor] design criteria, or other design criteria as the foundation. Further, the applicant is responsible for considering public safety

matters and fundamental concepts, such as defense in depth, in the design of their specific facility and for identifying and satisfying necessary safety requirements." Footnotes 3, 13, and 14 state that, "The technology-specific design criteria were developed using available design information, previous NRC pre-application reviews of the design types, and more recent industry and DOE [Department of Energy] national laboratory initiatives in these technology areas (see Reference 17). It is the responsibility of the designer or applicant to provide and justify the PDC for specific design."

Based on the Committee's recommendation, the staff issued the final RG 1.232 on April 3, 2018 (ADAMS Accession Number, ML17325A611). The staff appreciates the ACRS review and feedback. The staff looks forward to further interaction with the Committee on other upcoming advanced non-light-water topics.

Sincerely,

/RA Michael R. Johnson Acting for/

Victor M. McCree
Executive Director
for Operations

cc: Chairman Svinicki
Commissioner Baran
Commissioner Burns
SECY

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