



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

September 29, 2022

Ralph O. Meyer
28705 Hope Circle
Easton, MD 21601

Dear Mr. Meyer:

We have reviewed the letter that you sent dated August 1, 2022, relaying your technical concerns about the performance of fuel cladding during loss-of-coolant accidents. The U.S. Nuclear Regulatory Commission (NRC) is aware of these technical challenges with fuel that approaches certain burnups and has been engaged in research to better understand the issues. Some of the issues that you identified in your letter are addressed in the rulemaking related to Title 10 of the *Code of Federal Regulations* 50.46c, "Emergency Core Cooling System Performance during Loss-of-Coolant Accidents," that is currently under consideration by the Commission. However, most of the technical concerns that you identified are associated with fuel fragmentation, relocation, and dispersal (FFRD), which has been an area of active study for over a decade.

The NRC will also consider your recommendation as part of the petition for rulemaking (PRM) process and will advise you of the outcome.

Regardless of the outcome of the PRM process, you may be interested in knowing that the Commission recently approved a rulemaking effort to amend the existing regulations to allow U-235 enrichments of higher than 5.0 weight-percent (SRM-SECY-21-0109), "Staff Requirements—SECY-21-0109—Rulemaking Plan on Use of Increased Enrichment of Conventional and Accident Tolerant Fuel Designs for Light-Water Reactors," dated March 16, 2022). Recognizing that the most likely purpose for increased enrichments for existing nuclear power plants would be to increase fuel economy by extending the lifetime of fuel assemblies (i.e., increased burnup) and that FFRD becomes more of a concern at higher burnups, the Commission also directed the staff to address FFRD in this rulemaking. Based on the schedule proposed in SECY-21-0109, dated December 20, 2021, the NRC plans to publish the regulatory basis for public comment no later than calendar year 2023. You are welcome to submit your comments on the proposed rulemaking at that time.

Thank you for providing your views on how the NRC can provide reasonable assurance of adequate protection of public health and safety and help make the safe use of nuclear technology possible.

Sincerely,

Andrea L.
Kock

Digitally signed by Andrea
L. Kock
Date: 2022.09.29
17:58:22 -04'00'

Andrea D. Veil, Director
Office of Nuclear Reactor Regulation

SUBJECT: LETTER RESPONSE TO MR. MEYER REGARDING CONCERNS ABOUT THE
PERFORMANCE OF FUEL CLADDING DURING LOSS OF COOLANT
ACCIDENTS DATED: SEPTEMBER 29, 2022.

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