



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

April 29, 2020

MEMORANDUM TO: Scott W. Moore, Executive Director
Advisory Committee on Reactor Safeguards

FROM: John D. Monninger, Director /**RA** BSmith for/
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

SUBJECT: ELECTRIC POWER RESEARCH INSTITUTE – DRAFT SAFETY
EVALUATION, REVISION 1 FOR TOPICAL REPORT, “URANIUM
OXYCARBIDE (UCO) TRISTRUCTURAL ISOTROPIC (TRISO)
COATED PARTICLE FUEL PERFORMANCE: TOPICAL
REPORT EPRI-AR-1(NP)”

By letter dated May 31, 2019, Electric Power Research Institute (EPRI) submitted topical report (TR) “Uranium Oxycarbide (UCO) Tristructural Isotropic (TRISO) Coated Particle Fuel Performance: Topical Report EPRI-AR-1(NP),” to the U.S. Nuclear Regulatory Commission (NRC) for review and approval. This TR consolidates the technical bases for the functional performance of UCO-based TRISO-coated particles so these particles can be used by a variety of high temperature reactor (HTR) developers in their designs. EPRI’s letter is available in the Agencywide Documents Access and Management System (ADAMS) under Accession No. ML19155A173. The NRC staff discussed a preliminary set of questions with EPRI during a public meeting on December 9, 2019 (ADAMS Accession No. ML20029E871), and subsequently issued requests for additional information (RAIs) on January 2, 2020 (ADAMS Accession No. ML20009E065). By letters dated February 26, 2020 and March 9, 2020, EPRI submitted responses to the RAIs (ADAMS Accession Nos. ML20058A040 and ML20071D143, respectively).

The NRC staff’s draft Safety Evaluation (SE), Revision 1 for TR EPRI-AR-1(NP), can be found at ADAMS Accession No. ML20097E531. Note that in the draft SE, “Confirmatory Item” refers to planned revisions to the TR submitted in docketed RAI responses that have not yet been formally incorporated into a revision to the TR. The SE will support a future meeting of the Advisory Committee on Reactor Safeguards Subcommittee.

Docket No.: 99902021

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SUBJECT: ELECTRIC POWER RESEARCH INSTITUTE – DRAFT SAFETY EVALUATION,
 REVISION 1 FOR TOPICAL REPORT, “URANIUM OXYCARBIDE (UCO)
 TRISTRUCTURAL ISOTROPIC (TRISO) COATED PARTICLE FUEL
 PERFORMANCE: TOPICAL REPORT EPRI-AR-1(NP)” DATED: APRIL 29, 2020

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***via e-mail NRR-106**

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