



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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October 18, 2021

MEMORANDUM TO: Michael Orenak, Chief
Advanced Reactor Technical Branch 1
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

FROM: Jason Schaperow *Jason Schaperow* Signed by Schaperow, Jason
on 10/18/21
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SUBJECT: SUMMARY OF SEPTEMBER 14, 2021, PUBLIC WORKSHOP ON
SCALE/MELCOR SOURCE TERM DEMONSTRATION PROJECT –
PEBBLE-BED MOLTEN-SALT-COOLED REACTOR

On September 14, 2021, the U.S. Nuclear Regulatory Commission (NRC) staff conducted a public workshop on the SCALE/MELCOR non-LWR source term demonstration project. The project is part of the agency's efforts to prepare for safety reviews of non-LWR license applications. The project objectives are as follows:

- Understand severe accident behavior in non-LWRs;
- Provide insights for developing regulatory guidance;
- Develop publicly available input models for representative designs; and
- Facilitate dialogue on the staff's approach for determining source term.

The September 14, 2021, workshop covered the application of SCALE and MELCOR to determining source term for a pebble-bed molten-salt-cooled reactor. During the workshop, NRC, Sandia National Laboratories, and Oak Ridge National Laboratory staff presented SCALE and MELCOR modeling methods and results for simulating core fission product inventory and decay heat during normal operation and core heat up and fission product release to the environment during an accident. A total of 110 participants from the NRC, U.S. nuclear industry, international organizations, and other stakeholder organizations (e.g., Union of Concerned Scientists) attended.

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The September 14, 2021 workshop was one part of a series of public workshops for the SCALE/MELCOR non-LWR source term demonstration project. Previously, public workshops for heat pipe reactors and high-temperature gas-cooled reactors were held on June 29, 2021, and July 20, 2021, respectively, and the meeting summaries can be found at Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML21202A380 and ML21236A285, respectively.

The September 14, 2021, workshop notice is available in ADAMS at Accession No. ML21155A227, the workshop presentation is available at ADAMS Accession No. ML21256A231, and a video recording of the workshop is available [here](#). This workshop summary does not include an attendee list, because of the large number of attendees.

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