

**Merits and Viability of Different Nuclear Fuel Cycles and Technology Options
and the Waste Aspects of Advanced Nuclear Reactors**

December 6, 2021

Virtual Meeting

PUBLIC AGENDA

Draft: December 3, 2021

WEBEX connection details for public session:

<https://nas-sec.webex.com/nas-sec/j.php?MTID=m12c27ba3edbec804258e877d669909e6>

Meeting number (access code): 2764 170 4525

Meeting password: ekHPhJp4i35 (35474574 from phones and video systems)

Tap to join from a mobile device (attendees only)

+1-415-527-5035,,27641704525#35474574# US Toll

+1-929-251-9612,,27641704525#35474574# USA Toll 2

Some mobile devices may ask attendees to enter a numeric password.

Join by phone

+1-415-527-5035 US Toll

+1-929-251-9612 USA Toll 2

[Global call-in numbers](#)

Join from a video system or application

Dial 27641704525@nas-sec.webex.com

You can also dial 207.182.190.20 and enter your meeting number.

Join using Microsoft Lync or Microsoft Skype for Business

Dial 27641704525.nas-sec@lync.webex.com

Need help? Go to <http://help.webex.com>

Monday, December 6, 2021 (All times are ET.)

PUBLIC SESSION

- | | |
|----------------------------|---|
| 11:00 am – 11:05 am | Call Open PUBLIC SESSION to Order and Welcome
Janice Dunn Lee, Committee Chair, and Charles Ferguson, Study Director |
| 11:05 am – 11:35 am | On China's Nuclear Fuel Cycle
Hui Zhang , Ph.D., Senior Research Associate, Project on Managing the
Atom, Belfer Center for Science and International Affairs, Harvard
Kenny School (confirmed) |
| 11:35 am – 12:00 pm | Q&A for Academies committee and staff |
| 12:00 pm – 12:30 pm | Break |

12:30 pm – 12:55 pm	Trends in Nuclear Fuel Cycle Workforce Terry A. Todd , Ph.D., Emeritus Fellow, Idaho National Laboratory (retired) (confirmed)
12:55 pm – 1:25 pm	Q&A for Academies committee and staff
1:25 pm – 1:30 pm	Brief Break
1:30 pm – 2:00 pm	Perspectives from the Department of Energy’s Office of Nuclear Energy Kathryn D Huff , Ph.D., Acting Assistant Secretary and Principal Deputy Assistant Secretary for the Office of Nuclear Energy, U.S. Department of Energy (confirmed)
2:00 pm – 2:30 pm	Q&A for Academies committee and staff
2:30 pm – 3:15 pm	Perspectives from Congress: Panel Discussion with Key Staff of the Appropriations Committees of the Senate and House of Representatives Aaron Goldner , Ph.D., Professional Staff Member, Senate Appropriations Committee, and Scott McKee , Professional Staff Member, House Appropriations Committee (confirmed)
3:15 pm – 3:30 pm	Public Comment Period
3:30 pm	Adjourn Public Session

Click [here](#) to access videos and presentations from additional meetings of the Committee on Merits and Viability of Different Nuclear Fuel Cycles and Technology Options and the Waste Aspects of Advanced Nuclear Reactors.

To learn more about additional studies and programs at the Nuclear and Radiation Studies Board, click [here](#).

Reading Materials

TBA

Presenter Biographies

[Aaron Goldner](#), Ph.D., Professional Staff Member on the Senate Appropriations Committee

In addition to working on climate and energy modeling, he has spent the last 8 years working in public policy. Aaron’s work in policy has included working in the Office of Senator Sheldon Whitehouse as an American Geophysical Union (AGU)-AAAS Congressional Science Fellow and at the Department of Energy’s Office of Energy Policy and Systems Analysis doing climate and energy policy. In 2015, Aaron returned to the Office of Senator Whitehouse as a senior advisor on energy and transportation policy. He led the energy and infrastructure portfolio for the Senator’s work on the Environment and Public Works Committee. Aaron now serves as a professional staff member on the Senate Appropriations Committee, focusing on energy and

climate policy. Aaron received his bachelor's degree from Oregon State University where he studied Earth and Environmental Science. After graduation from OSU, he was a post-baccalaureate fellow at Los Alamos National Laboratory as part of its climate, ocean, and sea-ice modeling group where he looked at the effects of climate change on water resources. Following his work at Los Alamos, Aaron received his Ph.D. from Purdue University where he studied climate dynamics and global climate modeling.

[Kathryn D. Huff](#), Ph.D., Acting Assistant Secretary and Principal Deputy Assistant Secretary for the Office of Nuclear Energy, U.S. Department of Energy

Dr. Kathryn D. Huff serves as the Acting Assistant Secretary and Principal Deputy Assistant Secretary for the Office of Nuclear Energy. Prior to her current role, she was an Assistant Professor in the Department of Nuclear, Plasma, and Radiological Engineering at the University of Illinois at Urbana-Champaign where she led the Advanced Reactors and Fuel Cycles Research Group. She was also a Blue Waters Assistant Professor with the National Center for Supercomputing Applications. She was previously a Postdoctoral Fellow in both the Nuclear Science and Security Consortium and the Berkeley Institute for Data Science at the University of California - Berkeley. She received her PhD in Nuclear Engineering from the University of Wisconsin-Madison in 2013 and her undergraduate degree in Physics from the University of Chicago. Her research focused on modeling and simulation of advanced nuclear reactors and fuel cycles. She is an active member of the American Nuclear Society, Chair of the Nuclear Nonproliferation and Policy Division, a past chair of the Fuel Cycle and Waste Management Division, and recipient of both the Young Member Excellence and Mary Jane Oestmann Professional Women's Achievement awards. Through leadership within Software Carpentry, SciPy, the Hacker Within, and the Journal of Open Source Software she also advocates for best practices in open, reproducible scientific computing.

[Scott McKee](#), Professional Staff Member, U.S. House Appropriations Committee, Subcommittee on Energy and Water

Scott McKee focuses on energy and science accounts at the House Appropriations Subcommittee on Energy and Water Development. Previously, he worked at the Senate Committee on Energy & Natural Resources, the Bipartisan Policy Center, the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, and the Energy Information Administration at the Department of Energy. Scott has a B.S. and M.S. in Chemical and Biomolecular Engineering from the Georgia Institute of Technology.

[Terry A. Todd](#), Ph.D., Emeritus Fellow, Idaho National Laboratory (retired)

Terry Todd, Ph.D., retired from the Idaho National Laboratory in August 2021 and is currently an Emeritus Laboratory Fellow at the INL. While employed at the INL, he served as the Director of the Fuel Cycle Science and Technology Division from 2008 until 2019 and served as the National Technical Director for the DOE Nuclear Technology Research and Development Material Recovery and Waste Form Development Program from 2008 until 2020. He also was the inaugural and Director of the Glenn T. Seaborg Institute at the INL, from 2017 until his retirement. His primary focus is directing research and development of advanced technologies for spent nuclear fuel recycle and other chemical separation applications, as well as purification of isotopes for medical applications. Dr. Todd has 39 years of experience in chemical separation technologies involving spent nuclear fuel and radioactive waste. He holds B.S. and M.S. degrees in chemical engineering from Montana State University and a Ph.D. in chemical

engineering from Khlopin Radium Institute in St. Petersburg, Russia. He has published over 250 journal articles, reports and conference proceedings and has been awarded 23 U.S. patents and 6 Russian patents. He serves on the Editorial Board for the journal *Solvent Extraction and Ion Exchange*. Dr. Todd is a Fellow of the American Institute of Chemical Engineers (AIChE) and the American Nuclear Society (ANS). He has served on numerous international conference scientific advisory boards and technical program committees.

Hui Zhang, Ph.D., Senior Research Associate, Project on Managing the Atom, Belfer Center for Science and International Affairs, Harvard Kennedy School

Hui Zhang is a Senior Research Associate at the Project on Managing the Atom in the Belfer Center for Science and International Affairs at Harvard University's John F. Kennedy School of Government. Hui Zhang is leading a research initiative on China's nuclear policies for the Project on Managing the Atom in the Kennedy School of Government. His researches include verification techniques of nuclear arms control, the control of fissile material, nuclear terrorism, China's nuclear policy, nuclear safeguards and non-proliferation, policy of nuclear fuel cycle and reprocessing. Before coming to the Kennedy School in September 1999, he was a post-doctoral fellow at the Center for Energy and Environmental Studies, Princeton University from 1997-1999, and in 1998-1999, he received a post-doctoral fellowship from the Social Science Research Council, a MacArthur Foundation program on International Peace and Security. From 2002-2003, he received a grant for Research and Writing from the John D. and Catherine T. MacArthur Foundation. Hui Zhang received his Ph.D. in nuclear physics in Beijing in 1996. Dr. Zhang is the author of several technical reports and book chapters, and dozens of articles in academic journals and the print media including *Science and Global Security*, *Arms Control Today*, *Bulletin of Atomic Scientist*, *Disarmament Diplomacy*, *Disarmament Forum*, the *Non-proliferation Review*, *Washington Quarterly*, *Journal of Nuclear Materials Management*, *INESAP*, and *China Security*.