GEN IV International Forum
Expertise | Collaboration | Excellence

Webinar Invite

Education and Training Working Group

Join us on August 31, 2023, 8:30 a.m. EDT (UTC-4)

Corrosion and Cracking of SCWR Materials

Steam (with increased temperature and pressure) is always the challenge of power technology for high-efficiency production of electricity. Supercritical water fossil fired plants have been the mainstream for over 5 decays. A supercritical water-cooled nuclear reactor (SCWR) concept has been selected by the Generation IV International Forum (GIF), but scientists and designers are facing unprecedented difficulties in solving the problems in material, neutronics and thermo-hydraulics. The high temperature and pressure operation condition of a SCWR core is tough and challenging to the materials for the nuclear fuel cladding due to its thickness limitation, strict corrosion rate requirement and high reliability expectations. This webinar will present the state-of-art development of materials for SCWR fuel cladding, the mechanisms of general corrosion and stress corrosion cracking, the major factors affecting their corrosion and cracking performances, and the proposed testing procedures to obtain consistent and reproducible corrosion and cracking data under supercritical water conditions.

Free webcast!

August 31, 2023
8:30 am EDT (UTC-4)

Register NOW at:

https://attendee.gotowebinar.com/register/3867214821065405787

Who should attend:
policymakers, managers, regulators, students, general public

Dr. Lefu Zhang is a professor at the School of Nuclear Science and Engineering of Shanghai Jiao Tong University. He earned his Bachelor, Master and PhD degrees in material science from Huazhong University of Science and Technology. His research focuses on materials and water chemistry for light water reactors. In 2008, Dr. Zhang established a joint research laboratory for corrosion of nuclear power materials with Shanghai Nuclear Engineering Research and Design Institute. Under his 15 years of leadership, 80 high temperature and pressure water circulating loops have been built for general corrosion, stress corrosion cracking, fretting wear, fuel cladding tube performance and water chemistry tests, among them 15 systems are for supercritical fluid reactors. Dr. Zhang is the Chinese representative in Materials and Chemistry Project Management Board, and the Chinese substitute representative in System Steering Committee of Supercritical Water-Cooled Reactor Systems in Generation IV International Forum (GIF).

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Upcoming Webinars

27 September 2023, EPRI Virtual Reality Training, Mr. Bob Eller from EPRI, USA

31 October 2023, The Nuclear Workforce of The Future – Opportunities And Needs For The International Nuclear Sector, Mr. Callum Thomas

02 November 2023, MOOK: The knowledge management method applied to a Gen IV project. The continuation of a successful story, Gilles Rodriguez, CEA, France

For more information, please contact Patricia Paviet at patricia.paviet@pnnl.gov or visit the GIF website at www.gen-4.org