Research Home

Energy Research at EPRI

The tremendous potential of energy research to improve our quality of life continues to advance. We have access to leading-edge information, technology, and tools that make our work safer, responsive, and future-focused. Join us as we power forward toward a reliable, resilient energy future.

Our History

In November 1965, the Great Northeastern Blackout left 30 million people in the United States without electricity, starkly demonstrating the nation's growing dependence on electricity and vulnerability to its loss. It marked a watershed for the U.S. electricity sector and triggered the creation of the Electric Power Research Institute (EPRI). Although power was largely restored within 12 hours, the blackout prompted public and political scrutiny that continued for years. Leaders in the U.S. Congress were troubled by the nation's dependence on a fragmented, critical industry for which there was no unified planning and research. Dr. Chauncey Starr answered the call from Congress to create an independent research and development organization to support the electricity sector and address its technical and operational challenges. At a formal hearing of the U.S. Senate Commerce Committee, he presented his vision for the Electric Power Research Institute in serving its mandate for objective, scientific research. Much has changed in the electricity industry with advances in such technologies as renewable energy, environmental controls, and the smart grid. EPRI meets traditional and emerging challenges with technological innovation, thought leadership and technical expertise. Our research portfolio addresses a range of issues that change with the times and the technology, even as the underlying expectations remain constant for electricity that is affordable, reliable, and environmentally responsible.

GENERATION NUCLEAR ED&CS

Generation

EPRI's Generation sector provides information, processes and technologies to improve the flexibility, reliability, performance, and efficiency of the existing fossil-fueled and renewable energy generating fleet.

View More at **EPRI.com/research/sectors/generation**

Featured Researcher

Elizabeth Benton

Operations Coordinator

Elizabeth Benton is an Operations Coordinator with 15+ years at EPRI. Her focus is on enhancing member experience through events and digital resources. She plays a key role in maintaining, improving, and streamlining member-facing websites and tools.

VIEW DETAILS

Featured Research

Metallurgical Evaluation of an Additively Manufactured Nickel-Base Superalloy for Gas Turbine Guide Vanes

Status: Published Citation: Bridges, A, Shingledecker, J, Torkaman, A, & Houck, L. "Metallurgical Evaluation of an Additively Manufactured Nickel-Base Superalloy for Gas Turbine Guide Vanes." Proceedings of the ASME Turbo Expo 2020: Turbomachinery Technical Conference and Exposition. Volume 8: Industrial and Cogeneration; Manufacturing Materials and

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GENERATION NUCLEAR ED&CS

Energy Delivery and Customer Solutions

EPRI's Energy Delivery and Customer Solutions sector provides transmission, distribution, and end use R&D to guide utilities and stakeholders toward a safe, secure, resilient, affordable, reliable and environmentally responsible, integrated grid.

View More at **EPRI.com/research/sectors/edcs**

Featured Researcher

Deanna Sassorossi

Senior Technical Lead

Deanna Sassorossi, EPRI's Principal Sustainability, leads research on corporate sustainability, bridging science and industry for energy companies. Formerly at Eversource, she advanced sustainability goals.

VIEW DETAILS

Featured Research

Safety Implications of Lithium Ion Chemistries

Over the last three decades, lithium ion batteries (LIBs) have transformed modes of communication, transportation, and electrification. LIB energy storage is a crucial technology component needed to continue the transition towards a clean energy future. Safety of lithium ion batteries, specifically

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GENERATION NUCLEAR ED&CS

Nuclear

EPRI's Nuclear Sector conducts research to inform decisions related to the safe, efficient, and reliable operation of existing nuclear plants and the next generation of nuclear reactors. Through global collaboration with nuclear power plant (NPP) operators, vendors, service providers, regulatory agencies, and other research organizations, the Nuclear Sector develops cost-effective technologies, technical guidance, and knowledge-transfer tools that help maximize the value of existing nuclear assets and inform the deployment of new nuclear technology while maintaining or improving safety. EPRI's Nuclear Sector works with owners or operators of more than 360 reactors representing nearly 85% of the world's commercial nuclear units in countries across the globe.

View More at **EPRI.com/research/sectors/nuclear**

Featured Researcher

Elizabeth Worsham

Senior Technical Leader

Elizabeth is researching the application of nuclear power beyond the production of electricity, looking at how heat generated by a reactor could be

incorporated into industrial processes, such as the production of chemicals or synthetic fuels.

VIEW DETAILS

Featured Research

Materials Reliability Program: Pressurized Water Reactor Internals Inspection and Evaluation Guidelines (MRP-227, Revision 2-A)

The EPRI Materials Reliability Program (MRP) developed inspection and evaluation (I&E) guidelines for managing the long-term aging of reactor vessel internal components of pressurized water reactors (PWRs). Specifically, the guidelines are applicable to PWR internals structural components; they do not address fuel assemblies, reactivity control

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