EPRI's Nuclear Research and Development Program – Frequently Asked Questions

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How long has EPRI been doing nuclear research?

EPRI has been conducting nuclear research since the company was founded in 1973. To date our nuclear power program has developed more than 3000 unique products and services.

What kind of nuclear research do you do?

Our program includes the following:

- Nuclear safety
- Material Performance
- Power plant maintenance and operations optimization
- Equipment reliability improvements
- Low- and high-level waste and used fuel management and disposal
- Nuclear power plant security
- New reactor development
- Non-destructive testing of materials and components
- Fuel reliability improvements
- Management of aging materials, components, systems, and structures
- Asset management
- Radiation field reduction
- Risk assessment, communication, and management
- Human performance improvements

Who funds your research?

EPRI's annual nuclear R&D budget is approximately $90 million. About 5% of this funding is from government sources in cost-sharing arrangements. The other 95% is provided by electric utilities and nuclear power plant operators and owners from all over the world.

Our current membership in the nuclear program includes 100% of nuclear power plant operators/owners in the U.S., Canada, France, and Brazil. We also have members in Japan, the U.K., and Spain. The cumulative funding of EPRI's nuclear R&D program since its inception exceeds $2 billion.

How do you decide what type of research to do?

EPRI's strategic planning process defines the R&D activities required to meet objectives that support the national interests in energy security, environmental quality, economic strength, and leadership in science & technology. This plan was designed to be fully consistent with national energy policies and priorities. Public benefit is ensured through a broad range of stakeholder input. EPRI's strategic planning process also relies heavily on our domestic and international members – the owner/operators who are responsible for the safe and reliable operation of nuclear plants in the U.S. and around the world. Three-quarters of the world's nuclear power plants are either members or participants in our R&D program.

What is the goal of EPRI's research?

Our goal is to develop cost-effective technology for safe and environmentally friendly electricity generation, to help improve current power plant performance, and to support the development and deployment of new nuclear technology.

Where do you do your research?

About 35% of our nuclear work is done at the EPRI facilities in Charlotte, North Carolina and Palo Alto California. The rest of our work is contracted out to organizations (domestic or international) that are best suited for the job. Our contractors are either selected through a competitive bidding process or chosen as sole source because of unique capabilities. Our contractors span a broad range from universities to private contractors, reactor-designers, architectural engineers and utilities to government national laboratories.

How do you choose your researchers?

EPRI forms research teams for each project, using the best experience available in the nuclear industry. The contractors are chosen for their requisite expertise, depth of experience, and appropriate technology to perform the job. They are selected through a competitive bidding process or chosen as sole source because of unique capabilities. Our contractors may include universities, private contractors, reactor designers, architectural engineers, utilities, or national laboratories. Finding the most qualified scientific teams, rather than the lowest price, is the major goal.

What kind of freedom do your researchers have?

The purpose of EPRI research is to define prudent, conservative, cost-effective solutions for the electricity industry. Researchers are carefully selected to perform the work in an objective manner. EPRI project managers track the technical and financial progress of the project and provide overall guidance and support. They ensure the technical quality and accuracy of the R&D so that it meets the needs of our members and society.

What kinds of people work in EPRI's nuclear program?

EPRI employs more than 100 professional engineers and scientists in its nuclear R&D programs, many of whom have advanced degrees. They are recognized in the international scientific community for their accomplishments, and they publish articles regularly in peer-reviewed journals. They are respected by nuclear safety regulators for their commitment to technical excellence and plant safety.

Who benefits from your research?

The public, as well as EPRI members and program participants all benefit from the nuclear R&D program, a significant portion of which focuses on improving the safety and reliability of the existing fleet of nuclear power plants. The ratepayers benefit from the availability of low-cost, emission-free electricity. The country benefits from the security of a reliable and robust electricity generation portfolio. And the world benefits from the reduction in greenhouse gases. The current fleet of U.S. nuclear plants avoids the equivalent CO_2 currently emitted by 135 million automobiles, roughly 50% of the cars on the road.

Do you work with the government?

Currently 5% of the funding for the EPRI Nuclear Program comes from the U.S. government. This funding is matched by industry on a cost-shared basis under a Cooperative Agreement for jointly funded research. EPRI works with the U.S. Nuclear Regulatory Commission's Office of Nuclear Regulatory Research and the Department of Energy's Office of Nuclear Energy, Science and Technology. We work with international nuclear regulatory agencies on a case-by-case basis. Each of our research collaborations is guided by a formal Memorandum of Understanding.

What are your major accomplishments?

Here are a few of the major accomplishments of EPRI's nuclear program:

- In the area of safety, EPRI created the Nuclear Safety Analysis Center immediately following the Three Mile Island accident and helped organize its training and operations counterpart, the Institute of Nuclear Power Operations (INPO).
- In the area of advanced design, EPRI developed NRC-approved Utility Requirements Document (URD) for the deployment of advanced nuclear plants. One Advanced Boiling Water Reactor is now operating in Japan; another is under construction in Taiwan.
- In licensing, EPRI developed life cycle management guidelines for utilities to optimize the operating life of nuclear plants and to prepare for license renewal.
- In storage, EPRI researched feasibility of Yucca Mountain as a safe, central facility for the long-term storage of spent fuel.
- In terms of economics, EPRI developed hardware and software to maintain the high level of safety at a competitive generation cost, making nuclear power plants competitive with other types of power generation.

Contact Information

For more information, contact EPRI's Media Relations Department
Christine Hopf-Lovette, **chopf@epri.com**, 650-855-2733
Jackie Turner, **jturner@epri.com**, 650-855-2272.