



EPRI U: Training for a ‘Fluid’ Workforce

By Sharryn Dotson

The electric power industry workforce is more “fluid” than it used to be. Historically, power industry workers were expected to master one area in their careers, whether it was coal-fired boiler maintenance or nuclear plant water chemistry. Today, utilities increasingly swap workers among generation facilities. A technician who spent years at a nuclear plant may transfer to a job monitoring a wind power plant. To thrive, workers must be nimble and learn multiple skills. Training is essential for ongoing success.

“It used to be that you chose a segment of the energy sector and became an expert in that for your entire career,” said EPRI Training Manager Elizabeth McAndrew-Benavides. “With rapidly changing generation portfolios and power delivery systems, people are moving around rather than staying in one sector.”

Clay Goodman, Arizona Public Service’s (APS) training manager for fossil generation, said that utilities are encouraging workers to expand their knowledge and grow in their careers. “It’s rare anymore for employees to stay in the same jobs for their entire careers. As employees mature, they

move into leadership or transition to a different part of the company,” Goodman said. “We want employees who are engaged and good problem solvers. Having access to information and training can support that.”

For decades, EPRI has “transferred technology” and provided R&D results to the electric power industry through training, along with reports and other products. To address the industry’s workforce needs, EPRI established *EPRI U* in 2017, providing improved systems for technology transfer through a range of convenient training opportunities.



[Watch](#) a video of EPRI U with Training Manager Elizabeth McAndrew-Benavides.

“When EPRI completes research, the next question is always, ‘What now?’” said McAndrew-Benavides, who manages EPRI U. “My team is focused on helping our researchers create new and innovative courses to support technology transfer.”

EPRI U offers 380 online, classroom-based, and DVD courses encompassing power generation, power transmission and distribution, and nondestructive evaluation. It also incorporates EPRI’s [Standardized Task Evaluation Program](#), which helps utilities identify and qualify workers by developing evaluations for more than 100 maintenance tasks in the nuclear industry.

“People who register for EPRI U courses are often engineers who need training in specific areas such as turbines,” said McAndrews-Benavides. “EPRI U courses also can address the needs of workers seeking promotions or professional development hours.”

EPRI U Student Testimonial

“In each of the EPRI courses I attended, I left knowing how to do my task better. Whether through better understanding of the process or through learning the history of the industry that led us to how we operate today, I was able to bring something back to my job that would help me going forward. EPRI courses share a wealth of knowledge through experienced instructors and colleagues. I have built a strong network of resources through my EPRI attendance and plan to continue to use their classes to learn and move my career forward.”

—Todd Cervini, an Exelon engineer who has worked at Calvert Cliffs Nuclear Power Plant in Maryland

EPRI U is built on the same principle as a college or university, in which professors teach students about their research and students provide feedback. “EPRI U brings the full-cycle university approach—problem, research, application, feedback, more research, application, and so on,” said Goodman.

It is part of EPRI’s broader effort to diversify its products and share industry knowledge effectively with digitally inclined professionals. EPRI is providing more videos, apps, and other interactive tools for knowledge transfer, which is essential for preserving knowledge from previous generations of workers. The Center for Energy Workforce Development reports that over the next five years, 11.5% of utility personnel are expected to retire, with an additional 16% leaving the industry.

CLASSROOM, ONLINE, AND CUSTOMIZED TRAINING OPTIONS

EPRI technical staff develop EPRI U courses based on the most up-to-date research. “Our trainings are tied to EPRI research,” said McAndrew-Benavides. “Heat exchangers may not change, but heat exchanger research is always changing, and our courses reflect that.”

Advisory groups inform the development of EPRI U courses. These comprise training experts from various power industry sectors, representatives from workforce development centers, vice presidents of operations at utilities, and human resources professionals.

In determining whether a course is better suited for the classroom or computer, EPRI considers the topics and the number of participants along with their professional experience.

EPRI staff and other industry experts teach classroom courses, which are usually held at EPRI’s offices, offering networking opportunities. “You’re getting trained by experts who know the latest and greatest,” said McAndrew-Benavides. “You’ll get the added benefit of meeting and having conversations with professionals you may not have access to anywhere else.”

Classroom courses range from a couple of hours to six weeks; most are two to three days long. “The six-week course *Education of Risk Professionals* is split up into week-long sections,” said McAndrew-Benavides. “After each week, students return to their jobs for a week and apply what they learned before coming back for the next section.”

EPRI U has significantly expanded the roster of computer-based, online ‘distance learning’ courses, which are typically conducted through Webex. These

courses expand EPRI U's reach to international students and other individuals who are unable to travel to classroom courses or who find online education more convenient.

EPRI U can customize courses for power companies and train a group of workers simultaneously. "A recent example is our *Aging Management* course, which focuses on the work needed for relicensing a nuclear plant," McAndrew-Benavides said. "We customized this course for staff at a domestic nuclear power plant to help them launch work for a license renewal."

Nondestructive evaluation courses combine classroom experience with hands-on examinations to qualify personnel for power plant inspection and maintenance tasks, such as ultrasonic and visual evaluation of components.

ONE-STOP SHOP FOR STUDENTS

Before coming to EPRI in 2017, McAndrew-Benavides worked at the Nuclear Energy Institute, where she facilitated nuclear industry training programs and helped streamline training activities for nuclear engineers. This experience informed the design of EPRI U's web-based Learning Management System, which enables workers and managers to identify and register for courses and track completed courses, professional development hours, and certification requirements.

"Before we launched the digital portal for EPRI U, only supervisors knew what courses their employees needed to take for certifications or promotions," said McAndrew-Benavides. "Jane, the engineer, couldn't see the big picture of what she needed for the job she wanted."

The Learning Management System also gives students access to courses through tablets, computers, or smartphones. "EPRI U's digital resources make information sharing more robust and engaging, which can improve learning," Goodman said.

EPRI U: By the Numbers

Nuclear power courses (includes Standardized Task Evaluations): **202**
Power delivery and utilization courses: **28**
Generation courses: **44**
Nondestructive evaluation courses: **49**

WHAT'S NEXT FOR EPRI U?

EPRI U's advisory groups are exploring how to expand and refine course offerings, according to McAndrew-Benavides. One group is considering courses for human resources professionals at utilities and power plants.

Student feedback on courses informs future offerings. "We're putting in place more feedback mechanisms so that the courses are helpful and effective," McAndrew-Benavides said. "Student surveys can provide valuable information for EPRI U's course developers and EPRI researchers."

"Through EPRI U, EPRI researchers can gauge the effectiveness of their courses in transferring technology and knowledge to the industry," said APS's Goodman.

KEY EPRI TECHNICAL EXPERTS

Elizabeth McAndrew-Benavides