



INL engineers Kevin DeWall and Mark Holbrook teach an annual university course for nuclear industry professionals and NRC employees. It focuses on motor-operated valves, a key component to nuclear plant safety.

Idaho engineers help train next generation of nuclear plant workers

By Casey O'Donnell, for *INL Communications & Governmental Affairs*

It's a simple case of supply and demand.

As a generation of skilled nuclear professionals reaches retirement age, the nuclear energy industry faces a declining supply of comprehensive, experience-based knowledge among its operators. Yet the demand for such knowledge is as high as ever.

Consequently, this knowledge and the professionals who possess it hold great importance in the future of the nuclear energy industry.

Engineers Kevin DeWall and Mark Holbrook at the U.S. Department of Energy's Idaho National Laboratory are two such individuals. The engineers are experts on the subject of motor-operated valves, and they offer annual university courses on the topic to nuclear industry professionals and employees of the Nuclear Regulatory Commission.

In nuclear plants, motor-operated valves often carry out safety-related operations, such as isolating containment systems and initiating emergency functions. Although many of these valves don't do much when the plant is operating normally, their active safety function is incredibly important to plant safety.

"These are components that have to work if things go wrong," DeWall said.

DeWall first started researching motor-operated valves in 1985 at the request of the NRC. The agency asked INL to explore whether safety-related motor-operated valves in the nation's reactor fleet would be capable of functioning correctly in even highly unlikely accident scenarios. This question sparked the beginning of 18 years of extensive research.

Holbrook began supporting NRC regulation of motor-operated valves in 1990 as a technical expert for more than 110 NRC onsite motor-operated valve inspections. In this role, he participated in NRC inspections at a majority of the commercial nuclear power plants in the U.S.

Through their studies, DeWall and Holbrook developed improvements to America's nuclear fleet that enhanced the industry's safety.

By the time DeWall and Holbrook had finished their studies in 2003, they were two of the nation's leading experts on motor-operated valves. At that time, the NRC approached the pair with another way to benefit the nuclear industry with their expertise: teaching courses on motor-operated valves. Originally, these courses were intended only for NRC officials, but after a few years, members of the nuclear industry requested access to the courses as well.

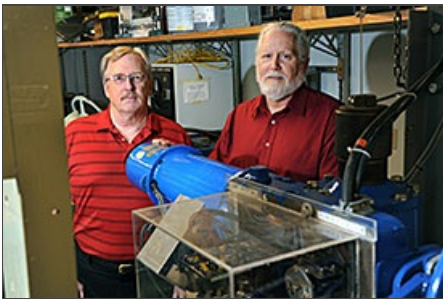
Using knowledge and equipment from their years of experience, DeWall and Holbrook lead course attendees in both lecture-based and hands-on learning situations. The courses aim to give students the level of understanding required to properly operate or care for motor-operated valves in a nuclear plant.

"Basically, we teach them how a motor-operated valve functions normally and what to look for during an inspection," Holbrook said.

The comprehensive and on-point nature of the courses has attracted national and international attention. Students have come from the United States, Spain, Belgium, Sweden and England. Furthermore, classes have been populated by a wide range of professionals, including nuclear engineers, plant manufacturers, maintenance technicians, consultants, plant managers and systems engineers.



The nuclear energy industry requested access to a course DeWall, shown, and Holbrook first offered to NRC employees in 2003.



Jolinda Reid, a nuclear technologist at Comanche Peak Nuclear Power Plant in Texas, spoke highly of the course she attended.

"I have been part of the MOV Engineering Team for the last three years," she said. "After attending the Motor Operated Valve Design Basis Course, my knowledge and understanding of MOV operations design and function has expanded."

DeWall and Holbrook offer their courses through Idaho State University's College of Science and Engineering and the Energy Systems and Technology Education Center, which aims to train technicians to serve in the energy sector. The courses are offered as needed, depending on agency and industry demand. The pair's most recent course was in July.

Through decades of research, Holbrook, left, and DeWall developed improvements to America's nuclear fleet that enhanced the industry's safety.

"The research we did for the NRC spanned years, and along the way we learned an awful lot about equipment, regulations and testing of motor-operated valves," Holbrook said. "Teaching these courses is all about passing the information we've gained on to the next generation of nuclear plant

workers."

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