

## ABSTRACT

### **2024 Workshop on Nuclear-Environmental Engineering and Science Education**

The U.S. is facing a critical workforce shortage that is impacting our country's ability to expand nuclear power generation to fulfill the growing demand for clean and reliable energy, as well as uphold the country's enduring national security mission, and clean up our country's defense nuclear legacy. As the nuclear industry continues to evolve and expand, workforce development has emerged as a critical imperative to ensure sustainability and growth. The challenges of addressing current labor shortages and the strategies being employed to meet the needs of government sectors and industry are multifaceted and require collaboration among educators, industry experts, and government officials to ensure educational programs are aligned with government and industry needs yet address academic requirements.

Collaborations are underway; for example, in 2022, a workshop was held at the Massachusetts Institute of Technology (MIT) with the goal of improving nuclear waste education. A second workshop was held the following year at Clemson University with a focus on developing teaching resources that can be used for educational purposes. The third workshop is being held at Vanderbilt University this summer. The objective is to identify the technical competencies and sociotechnical competencies (the knowledge needed to understand the complex political, ethical, and environmental challenges this industry faces) required for students to establish a career path in the nuclear-environmental industry.

A pre-workshop survey is being sent to all participants asking them to identify and rank the technical and sociotechnical competencies that are critical to understand today. Panel discussions will be held, and surveys will be re-taken during the workshop after all parties have an opportunity to discuss their experiences and opinions. The results of the surveys and other considerations identified during the workshop will be factored into the development of a curriculum guide that will have multiple applications and will be available for any interested party to use.

Workshop participants will represent all sectors of the nuclear-environmental industry. For example, government representatives from the Department of Energy and the Nuclear Regulatory Commission will be participating as well as representatives from the State of Tennessee. Non-governmental organizations such as the Nuclear Energy Institute and the Electric Power Research Institute will also be sending representatives. Private industries participating include Holtec, Southern Company, and Amentum as well as DOE contractors United Cleanup Oak Ridge and Idaho Environmental Coalition. The Oak Ridge Associated Universities will also be participating as will representatives from Vanderbilt University, MIT, Clemson, University of Michigan, University of Tennessee-Knoxville, and Chattanooga State. These are just a few of the organizations and institutions participating in the Workshop which demonstrates the collaborative nature of this endeavor.