



U.S. Department of Energy

Reactor Ready Training Program in Support of Building Industry Recognized Reactor Safety Nuclear Pipelines

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Program: Nuclear Safety
Training and Workforce
Development Program

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ABSTRACT:

With proximity to the Pacific Northwest's only nuclear power plant, the Columbia Generation Station, the USTUR, and other nuclear industries, WSU Tri-Cities in conjunction with WSU Pullman and Spokane are optimally positioned to lead the development and implementation of nuclear safety training and workforce development programs. We will rely on the power of the WSU system from 4 of the 6 WSU campuses all located in the eastern part of the State and close to Energy Northwest, our partnership with the community colleges, and with industry to accomplish the tasks of the grant. We will also capitalize on our expertise in community benefits work we have accomplished as part of the Pacific Northwest Hydrogen Hub and our diverse local community and student bodies. Additionally, WSU Pullman has an operating reactor on campus, and WSU Tri-Cities will house and share time and talent with Columbia Basin College for the X-energy Small Modular Reactor Simulator as part of the placement of the second in the nation SMR at Energy Northwest. The proposal outlines strategies to develop nuclear safety programs that introduce new talent pools to the nuclear field, serve the needs of students at all degree levels, industry needs for on-boarding and upskilling/reskilling workers, and those who wish to enter the nuclear industry.

Major Deliverables:

- Development of a consortium of academic institutions and industry partners to ensure curricular relevance and experiential learning.
- Creation of a nuclear workforce gap analysis related to Reactor Safety Training at nuclear power plants and other nuclear industries throughout the United States
- Creation of the Reactor Ready workforce preparation programs including curriculum development for all position levels (entry through engineers) that can be delivered prior to, at the time of hire or throughout the career life cycle including as non-credit upskilling/reskilling, during technical training, or as part of a formal degree curriculum at any degree level.
- Development of a new talent pool for the nuclear workforce through engagement of Native Americans.

Scope and Objectives of the Project:

The focus of this proposal is to generate educational programming based on nuclear expertise from academia, technical trades, and industry that could ultimately be recognized by the nuclear industry including power plants, manufacturing, and construction as the gold standard in addressing deficiencies in safety preparedness in the nuclear workforce pipeline. Partners in the creation of these programs include Washington State University Pullman and Tri-Cities, Columbia Basin College, Energy Northwest, Atkins Realis, and the Tri-Cities Economic Development Council.

Description of the Project:

The Reactor Ready Training Program starts with an established consortium of academic institutions and industry partners with additional members added once funded. The consortium will collectively create



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pathways for groups of students who are enrolled in degree and certificate programs, employees of industry partners who need additional training, and for individuals wanting to reskill/upskill from other positions or industries.

The first step for the Reactor Ready Training Program is to identify knowledge gaps in new and existing employees by engaging with nuclear industry members to evaluate workforce needs at existing nuclear power plants (NPPs), small modular reactors (SMRs), research and development laboratories, including U.S. National Laboratories, as well as academic institutions with nuclear-related programs, centers, and institutes, and others. This analysis will assist in curricular development that will lead to the ability to grow emerging workforce capabilities and capacity, to enhance current workforce skill levels at these sites, and approach new talent pools not currently represented in the nuclear workforce.

Major Tasks:

The Reactor Ready Program has four main tasks. (1) Conduct a workforce gap analysis of nuclear power plants and adjacent industries throughout the United States. (2) Enhance the Reactor Ready Consortium with additional members from the nuclear industry, academics, and agencies involved with nuclear energy. (3) Use the information received from the nuclear workforce gap surveys to create and/or enhance Reactor Ready Training Programs. (4) Utilize the Reactor Ready Consortium to develop a professional certification recognized and accepted by the nuclear industry.

Methods to be Employed:

To establish a list of nuclear workforce gaps, a set of surveys will be created and administered to managers at nuclear power plants and adjacent industries throughout the United States. Creation of the initial proposed Reactor Ready Training Program is based on the already identified workforce gaps at Washington State's Nuclear Power plant, the Columbia Generating Station at Energy Northwest. New courses or course modules will be added as other workforce gaps are found. The Reactor Ready Consortium will also oversee the renovation of the teaching labs such as the new Small Modular Reactor Simulator provided as a grant from Energy Northwest and in conjunction with WSU Tri-Cities and CBC and the development of professional development non-credit short courses, creation of professional certification exams as necessary. An engagement, development, and deployment team will focus on creating a new nuclear talent pool through the development and delivery of remote coursework and engagement with Native American Tribes.

Potential Impact of the Project:

By robust engagement of stakeholders in academia, industry, course delivery, and diverse populations, a consortium devoted to the development, advancement, enhancement of a nuclear workforce pipeline from STEM to industry will help to (1) *keep existing U.S. nuclear reactors operating*, (2) *deploy new reactors*, (3) *secure and sustain our nuclear fuel cycle*, and (4) *expand international nuclear energy cooperation* through the development of new pathways into nuclear science and technology.

Senior/Key Personnel: **WSU:** Zachariah M. Heiden, Associate Director and Associate Professor, Nuclear Science Center; Kate McAteer, Vice Chancellor for Academic and Student Affairs & Lead for the PNWH2 Hub Community Benefits Project; Changki Mo, Academic Director, School of Engineering and Applied Sciences; Michelle Hrycauk Nassif, Director, Cougar Tracks ; **Columbia Basin College (CBC):** Jesus Mota, Dean for Career & Technical Education ; **Energy Northwest:** Christopher Maxwell; **Atkins/Realis:** David Bergmann, Chief Engineer; **TRIDEC:** Sean O'Brien, Director, Energy Forward Alliance.