

Postdoctoral Research Associate in Thermal Hydraulics

Nuclear Science and Technology Division Oak Ridge National Laboratory Oak Ridge, Tennessee

ORNL10-65-NSTD

Project Description:

The Thermal-hydraulics and Irradiation Engineering (TH&IE) Group within the Nuclear Science and Technology Division (NSTD), Energy and Engineering Sciences Directorate, Oak Ridge National Laboratory (ORNL), seeks applications for a postdoctoral position, with emphasis in the area of thermal/fluid analysis.

One of the major focus areas of the TH&IE Group is performing thermal/fluid analysis to support development of advanced heat transfer and fluid flow systems. Analysis includes development of nuclear reactor cooling systems, fusion energy reactor cooling systems, thermal/fluid experiment designs, etc. that support a variety of customers within the Department of Energy, the Nuclear Regulatory Commission, the Department of Defense and other government and private organizations. This group uses state of the art computational fluid dynamics and transient thermal/fluids analysis codes and methods to develop system designs and perform safety evaluations. The successful candidate will work with several experienced thermal hydraulic engineers to establish problem solution paths and interpret analysis results.

The engineer/scientist filling the position will be required to assess problems posed by customers, determine the appropriate solution path including selection of codes or solution methods to be used, set up the problem for analysis, and assess the analysis results. This position requires excellent analytical, computational, writing, and presentation skills to successfully complete assigned projects. He/she will work in a team environment, interacting with other ORNL staff, both within and outside the TH&IE group and will be expected to have the skills necessary to perform design and safety calculations; fully document the work performed, and effectively interface with project sponsors.

Qualifications:

Candidates must have a Ph.D. with a demonstrated aptitude for the application and/or development of thermal design methods, computational fluid dynamics, transient analysis, and computational techniques. Applicants must have demonstrated problem-solving skills and a willingness to apply those skills to a variety of problems. The candidate must have experience using finite element or finite difference (volume) methods and software for solving thermal and fluid problems and a background in C and C++ applied programming. Experience in the development and use of computational methods for large-scale, parallel thermal-hydraulics simulations, benchmarking and comparison of fluid solvers is also needed.

Excellent communication skills including verbal, presentation, and writing skills are required to enable effective interaction with technical peers, program managers, and sponsors. Additionally, this position requires that the candidate work with other members of the group to develop new programs, write proposals, and pursue new funding opportunities. Applicants cannot have received the most recent degree more than five years prior to the date of application and must complete all degree requirements before starting their appointment.

Technical Questions:

Questions regarding the position can be directed to Graydon Yoder, yodergljr@ornl.gov. Please include the requisition number and title when corresponding.

How to Apply:

Qualified applicants must apply online at https://www2.ornl.gov/ORNL_POST/. All applicants will need to register before they can begin the online application. For complete instructions, on how to apply, please see the instructions at <http://www.ornl.gov/orise/edu/ornl/ornl-pdpm/application.htm>.

This appointment is offered through the ORNL Postgraduate Research Participation Program and is administered by the Oak Ridge Institute for Science and Education (ORISE). The program is open to all qualified U.S. and non-U.S. citizens without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.