Post Master's or Postdoctoral Research Associate in Nuclear Engineering

Nuclear Science and Technology Division
Energy and Engineering Sciences Directorate
Oak Ridge National Laboratory
Oak Ridge, Tennessee

ORNL09–69–NSTD

Project Description:
A postdoctoral or post-masters research associate position will be available in the Radiation Transport and Criticality Group of the Nuclear Science and Technology Division at the Oak Ridge National Laboratory. The project will involve identification of improved and efficient non-destructive assay (NDA) techniques for spent fuel measurements. The position involves investigation and evaluation of relevant NDA techniques, as well as combinations of techniques, using independent Modeling and Simulation (M&S) tools. Research will focus on determining and quantifying advantages and disadvantages of the NDA techniques for safeguards applications by utilizing applicable M&S tools and evaluation by comparison to actual destructive analysis (DA) and NDA measurements on spent fuel at ORNL. In-depth comparisons and evaluations of the relevant NDA techniques for quantifying the Pu in spent fuel by means of M&S will be performed. M&S will also be used to evaluate the merits of integrating more than one technique with complementary characteristics. Furthermore, computational benchmark calculations with independent M&S tools will be performed to understand the uncertainties in the computations due to transport methods and underlying nuclear data and the propagation of these uncertainties to estimate the errors in the quantities derived from the NDA methods.

Qualifications:
A masters or Ph.D. in nuclear engineering is required. The candidate will participate as a member of a research and development team and will work with members of different groups across various divisions and must possess the associated interpersonal and communication skills. The ideal candidate would have experience with various NDA and/or DA techniques for quantifying fissile materials. The ideal candidate would have experience with ORNL criticality safety or radiation transport codes and modeling and simulation of NDA techniques. Experience in computer programming with FORTRAN (95 or 2003 standard) and UNIX/LINUX-based operating systems is a plus.

U.S. citizenship is not required; however, it is desirable that the candidate either holds or is able to obtain a Department of Energy security clearance. 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. Salary ($60,000 to $86,000 per year plus benefits) will be determined according to the education, research skills, and experience of qualified candidates.

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date of application and must complete all degree requirements before starting their appointment.

Technical Questions:
Contact Sedat Goluoglu at goluoglus@ornl.gov (Please reference the position title and number when corresponding about this position.)

How to Apply:
Qualified applicants must apply online at https://www2.orau.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.orau.gov/orise/edu/ornl/ornl-pdpm/application.htm. When applying for this position, please reference the position title and number.

The postdoctoral position will be offered through the Oak Ridge Institute for Science and Education (ORISE) Oak Ridge National Laboratory Postgraduate Research Associates program http://www.orau.gov.orise.edu.ornl.ornl-pd/ornlpdoc.htm. These positions is open to all qualified candidates without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.