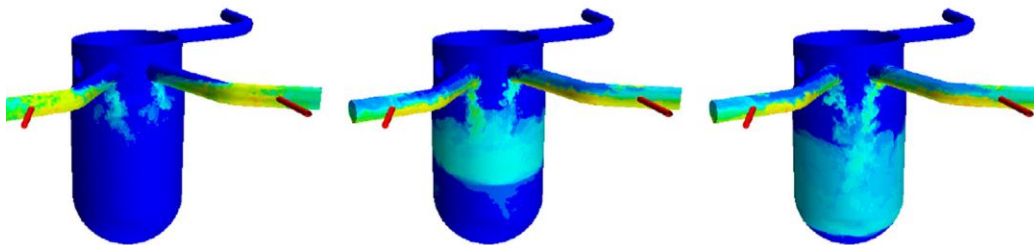


Nuclear Research & Consultancy Group (NRG) develops and provides sustainable nuclear technology for energy, environment, and health. NRG offers a wide range of services to energy utilities, government organizations and various branches of industry - including the nuclear, financial services and medical sectors. NRG is a major producer of medical isotopes in Europe.

Within our department Safety and Power, we are currently seeking for a

### **MSc THESIS STUDENT: CFD – TWO-PHASE FLOW MIXING**

One of the main application targets of two-phase CFD for Nuclear Reactor Safety (NRS) is the two-phase Pressurized Thermal Shock (PTS), which is related to PWR Reactor Pressure Vessel (RPV) lifetime safety studies. The main objective of the proposed MSc thesis is to participate in further development and analysis of two-phase CFD models for PTS applications.



#### **Your responsibilities:**

The main responsibilities are as follows:

- 1) Learning the OpenFoam CFD solver.
- 2) Perform a literature survey to identify potential validation cases and numerical models used in the literature for modeling the Two-phase PTS problem.
- 3) Perform a feasibility study to determine:
  - a. The numerical model - Euler/Euler or Interface tracking (VOF)
  - b. Influence of turbulence models
- 4) Feasibility of the adopted methodology on a simplified domain with no heat & mass-transfer.

#### **Your profile:**

- MSc student in applied science, with specialization in computational fluid mechanics
- Good knowledge of turbulence modelling and numerical methods
- Required computer experience: Linux, Fortran or C/C++
- Fluency in written and spoken English
- Good analytical and problem solving skills
- Dedicated, good communication and social skills

#### **Our offer:**

- A challenging thesis project to be executed within a successful team with an informal atmosphere and an excellent reputation
- Strong support from enthusiastic members of the CFD team
- Monthly allowance/stipend
- Housing and transportation compensation for the period of stay

**Information and applications:**

Would you wish to know more about the opportunity? Then, contact Afaqe Shams (shams@nrg.eu, +31 224 56 8152). You can send your application to:

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