Student project at Nuclear Research and Consultancy Group (NRG)

Title	MSc THESIS STUDENT: CFD – TWO-PHASE FLOW MIXING
Category	Diploma Work
Employer	Nuclear Research and Consultancy Group (NRG)
Location	Petten, North Holland, the Netherlands
International	Yes, international applications are welcome

Description:

NRG is the sole nuclear service provider in the Netherlands. Our customers include major international companies. Our motive is to ensure a renewable energy supply, a cleaner environment and better health.

Our business is to provide specialised, technical services in the areas of risk, safety and optimisation of business operations in the nuclear, oil and gas and petrochemical sectors. We are leaders in the field of Computational Physics for research and innovation for many nuclear applications. Further international development is one of our key ambitions. Our offices are located in Arnhem and Petten. The team is based in Petten.

Within our unit Research and Innovation, we are currently seeking for a

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One of the main application targets of two-phase Computational Fluid Dynamics (CFD) for nuclear reactor safety is the two-phase Pressurized Thermal Shock (PTS), which is related to the reactor pressure vessel lifetime safety studies of existing nuclear reactors. The main objective of the proposed MSc thesis is to participate in the further development and analysis of two-phase CFD models for the PTS applications.

Your responsibilities:

The main responsibilities are as follows:

1)	Perform a literature survey to identify potential validation cases and numerical models used in the literature for modeling the two-phase PTS problem.
2)	Learn the OpenFoam CFD solver.
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