



R&D Internship CFD simulations for Generator Circuit Breaker 80-100% (f/m/d)

Hitachi ABB Power Grids is a pioneering technology leader that is helping to increase access to affordable, reliable, sustainable and modern energy for all. We help to power your home, keep the factories running, and our hospitals and schools open. Come as you are and prepare to get better as you learn from others. Bring your passion, bring your energy, and plug into a team that appreciates a simple truth: **Diversity + Collaboration = Great Innovation**

Generator Circuit Breakers (GCB) play a major role in power plant protection, offer more flexibility for plant operation and enable the implementation of efficient solutions to reduce investment cost. Maintenance, energy efficiency and carbon footprint are now also enhanced thanks to GCB architecture optimization. Objective of the internship is to carry out arc and thermal-fluid-dynamic simulations to evaluate the performances of a Generator Circuit Breaker (GCB) during operation under steady state and transient electrical loads. One of the objectives is to verify the thermal limits of the device according to the GCB standards and customer requirements. The study will be carried out with the software FLUENT (thermo-fluid dynamics), with an ABB in-house toolbox for Electro-Thermal Analysis based on the Full Maxwell module for the electromagnetic losses and with a dedicated tool for the arc simulations. The candidate will receive dedicated assistance and support from the HAPG engineers and scientists. Therefore, we are searching for an outstanding personality who will support our team in Zurich. The duration of the internship is 6 to 12 months.

Your responsibilities

- Literature search on recent work regarding GCBs

- Arc simulations and prediction of thermo-fluid-dynamic performances of a GCB by means of the software FLUENT

- Improvement of 1D simulation software in combination with 3D-CFD

- Data post-processing, analysis and evaluation of the results

- Propose improvements to the simulated case in collaboration with the Hitachi-ABB team

- Plan a dedicated validation campaign

Your background

- Bachelor or Master (preferred) in Mechanical Engineering or a related field

- Background in fluid-dynamics and thermal management. CFD background (ANSYS FLUENT) is a plus

CAD knowledge (Creo is a plus)

Meshing knowledge (ICEM, GAMBIT) and proficiency in programming (Python)

Fluency in written and spoken English, German is a plus

Ability to work in a team, as well as willingness to handle responsibilities independently

More about us

Hitachi ABB Power Grids is a global technology leader with a combined heritage of almost 250 years, employing around 36,000 people in 90 countries. Headquartered in Switzerland, the business serves utility, industry and infrastructure customers across the value chain, and emerging areas like sustainable mobility, smart cities, energy storage and data centres. With a proven track record, global footprint and unparalleled installed base, Hitachi ABB Power Grids balances social, environmental and economic values, and is committed to powering good for a sustainable energy future, with pioneering and digital technologies, as the partner of choice for enabling a stronger, smarter and greener grid.

www.hitachiabb-powergrids.com

Interested in joining our team? If so, we look forward to receiving your full application (motivation letter, CV, references) only via our online careers tool.

Hitachi ABB Power Grids Switzerland

Richard Adu

Talent Acquisition

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