

DEMO Plasma Equilibrium and Stability Responsible Officer

Job Description

The DEMO Plasma Equilibrium and Stability Responsible Officer in the DEMO Central Team (DCT)¹ is responsible for providing the equilibria consistent with the DEMO plasma scenario and analyzing, in close collaboration with WPMAG and WPDC, the requirements for the DEMO coil system. Another area of work is the stability analysis of equilibria, which will determine the achievable kinetic pressure and hence the fusion power for a given configuration. The position requires building up strong links with the related EUROfusion Work Packages within Fusion Technology Department as well as those in the Fusion Science Department. Another responsibility is the definition and supervision of specific tasks in the area that are carried out by WPDES.

Main Duties and Responsibilities

- Conduct plasma equilibrium analyses and validation of plasma configuration solutions.
- Determine the wall loading conditions during normal and off-normal operation and their consequences for machine design.
- Define and coordinate related tasks in the work package WPDES with European fusion laboratories to evaluate the results and to ensure that the impact is reflected in the plant design evolution and all the affected project interfaces are updated. This includes for example plasma disruption analyses, vertical stability analysis or toroidal field ripple analysis.
- Conduct trade-off and sensitivity studies and coordinate the development of design improvements based on the analyses outcomes.
- Liaise with the Work Packages Diagnostics and Control (WPDC) and Magnets (WPMAG) to ensure that provisions are implemented to ensure robust diagnostics and control methods of the plasma equilibrium and stability.

Required / desired qualifications and competencies

- PhD degree in Engineering or Physics
- At least 5 years of relevant work experience
- Good knowledge on disciplines of relevance for the post (i.e., Plasma Equilibrium, Plasma Control, Plasma Stability etc.)
- Good knowledge of tokamak magnet systems.
- Experience in monitoring and managing research tasks is required.
- Ability to use relevant simulation tools for disruption simulations, plasm-wall interactions.
- Good interpersonal skills
- Excellent written and verbal communication skills in English

The post holder will work in Garching (Germany) and will report to the Head of the DCT Plasma System Division. In the initial phase before the Head of that Division is installed, reporting will be directly to the FTD Head.

¹ In FP9, the DCT is foreseen to advance the design basis (physics and technology) of a DEMO fusion power plant, by implementing and agile architectural design capability, impartial analysis of options, and quick access to the expertise distributed in the EU fusion laboratories, universities and industry. This is needed to ensure the rapid convergence towards a feasible DEMO plant architecture (see G. Federici, C. Baylard, DEMO Project Charter Proposal, IDM reference: 2P3ZEP. April 2020).

Date of Job Vacancy: January 1st, 2021

Application Deadline: September 15th, 2020

The applicant will ideally already have a work contract with a EUROfusion Beneficiary and will be seconded to the EUROfusion Programme Management Unit (PMU) in Garching. Otherwise, she/he will have to secure a work contract with one of the Beneficiaries, to be seconded to the PMU in Garching.

The EUROfusion secondment will ideally run until the end of the Horizon Europe framework period (31 December 2027), but the actual labour contract might be subject to the rules, regulations and conditions of the Beneficiary that employs the applicant.

EUROfusion strives for diversity and inclusion, and explicitly encourages members of minority groups, and females, to apply for this position.

In case the candidate is shortlisted, the interviews will take place by the mid of October. Please send your completed application including CV, cover letter and examples of your past-related work experience to: anne.graebner@euro-fusion.org.

CONTACT: Gianfranco Federici

Tel: + 49 (0)89 3299 4228

E-mail: gianfranco.federici@euro-fusion.org