



JOC-VN-163

Position Title: Neutron Diagnostic Specialist

Background

The Spectroscopy and Neutron Group is responsible for a number of major neutron and gamma diagnostics instruments in support of JET operations and fusion science developments. The main neutron diagnostics are yield monitors, neutron profile monitors and neutron spectrometers for the 2.5 MeV and 14 MeV neutrons from DD and DT reactions. A recent program of upgrades (JET-EP2) has upgraded older systems and introduced several new ones. During the 2012 intervention (planned for July-December), the 2.5 MeV systems will be calibrated by deploying a Cf neutron source into the JET vessel, manipulated by Remote Handling. This is the first time such a calibration has been performed since 1989.

The present reference plan for the exploitation of JET foresees a period of tritium operation in 2015. It is therefore necessary to increase the size of the team, in order to begin the preparations of the diagnostics for D,T operations and to prepare a calibration of the 14 MeV neutron diagnostics .

Main responsibilities

The intention is to recruit one person to the JET Operating Contract Team (JOC).

The scope of the position covers:

1. Review the technical status of JET neutron diagnostics for DT operation and propose (and lead / participate in) any identified refurbishments over the next three years.
2. Take a major role in the development of a technique for calibration of JET 14 MeV neutron diagnostics with an in-vessel source which will need to be deployed in an intervention possibly as early as 2013.
3. As a member of the neutron group, participate in the operation of the various diagnostics.
4. To act as interface for Fusion Technology tasks between JOC and EFDA on diagnostics

Special Features

Although the primary responsibility is in preparation for future DT experiments, the Neutron Group functions as a team and the secondee may be asked to assist with operation and/or maintenance and calibration of other systems for which the group is responsible, specifically during the 2012 neutron calibration campaign.

Some shift working may be required in support of JET operation and the candidate may be expected to qualify for beryllium and radiation worker status.

Desirable qualifications, aptitudes and experience

1. Several Years of Fusion Neutron Measurement experience , ie a broad practical (“hands-on”) knowledge of and experience with technologies and techniques relevant

to fusion neutron diagnostics, such as detectors, electronics, data acquisition and calibration.

2. Experience of neutron system calibrations and good knowledge of the associated issues in accelerators/fusion devices.
3. Several years of experience in neutronics calculations for design and/or analysis
4. Ability to work within a team and in a regulated safety and QA environment is essential.
5. Fluency in computer languages (eg PYTHON, FORTRAN) for data analysis, and familiarity with UNIX, would be an advantage.
7. Ability to show initiative and manage projects as required.

Notes

1. Participation in the scientific programme is encouraged, through the sending Association.
2. Publications are encouraged, both through the sending Association, and, for some instrumental aspects, through the Operator.
3. There will be no formal line management or financial responsibility.
4. Work on hardware systems must comply with the CCFE safety and quality systems.

For more information regarding the position please contact: Klaus-dieter.zastrow@ccfe.ac.uk

Applications through the Head of Association to the JOC Senior Manager, Tim Jones by 19th March 2012

Note that candidates who are not EU nationals will need to obtain a visa to work in the UK. CCFE can provide advice on the issues