Application Pack

Technical Group Leader (Manufacturing Technology and Equipment Qualification)
Vacancy Ref: 4628
Table of Contents

Table of Contents ........................................................................................................... 2
UK Atomic Energy Authority .......................................................................................... 3
The Role ......................................................................................................................... 5
Selection methods ......................................................................................................... 10
Employee benefits ........................................................................................................ 11
How to apply .................................................................................................................. 18
UK Atomic Energy Authority

The UK Atomic Energy Authority (The Authority) is one of the world’s leading research organisations supporting the development of fusion energy. Its primary mission is to advance fusion science and technology to the point of commercialisation of fusion energy and to position the UK such that it has a significant role in the fusion energy market. This is done through the Culham Centre for Fusion Energy (CCFE).

UKAEA has 1700 staff and agency supplied workers, including world-leading scientists and engineers, fostering close links with international partners, industry and academic institutions; it also supports the development of the Culham Science Centre and Harwell science, innovation, technology and business campus. It is a Non-Departmental Public Body sponsored by the Department for Business, Energy and Industrial Strategy (BEIS).

The activities of UKAEA include:
- operating the Joint European Torus (JET), Europe’s premier fusion facility, under a contract with the European Commission;
- the UK fusion research programme, including a major upgrade to the Mega Amp Spherical Tokamak (MAST) device, funded by a grant from the Engineering and Physical Sciences Research Council (EPSRC);
- development of new facilities on the Culham site, such as RACE (Remote Applications in Challenging Environments), MRF (Materials Research Facility) FTF (Fusion Technology Facilities) and H3AT (Hydrogen-3 Advanced Technology) centres as well as various other to develop the technologies required for demonstration fusion reactors;
• A conceptual design programme for a spherical tokamak fusion reactor, STEP, to provide a leadership position for UK industry in delivering fusion power
• ownership and management of the Culham Science Centre, freehold ownership of most of the Harwell campus and a share in the joint venture (with STFC and a private sector partner) to continue the development of the campus as a vibrant science, innovation, technology and business campus
• a business development programme, in both fusion and adjacent sectors such as materials, robotics, neutronics, component testing, tritium handling, advanced computing and modelling, as well as work for ITER (see below), and
• management of historic liabilities, and of the Authority’s pension schemes.

ITER is a global scientific collaboration to prove the feasibility of energy from fusion on an industrial scale. Construction of the ITER facilities is underway at Cadarache in the south of France. Europe’s ITER agency, Fusion for Energy, allocates grants and contracts to fusion laboratories and industry to complete the research and design for specialist ITER systems and construction of major components and UKAEA has been successful in winning a number of these grants or contracts or supporting UK industry to win contracts.

UKAEA manages an overall annual budget of around £160m, with income primarily received through Euratom, BEIS and EPSRC programme funding
# The Role

<table>
<thead>
<tr>
<th>Career Family:</th>
<th>Engineering</th>
<th>Reports to:</th>
<th>Line manager: Technology Department Manager (role based at Rotherham)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Title:</td>
<td>Manufacturing Technology &amp; Equipment Qualification Group Leader</td>
<td>No. of employees/ASWs FRM for: (direct line management)</td>
<td>Up to 5</td>
</tr>
<tr>
<td>Level:</td>
<td>6</td>
<td>Total No. of staff in resource management chain</td>
<td>Up to 25</td>
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**Overall Purpose:**
Plan, recruit, build and lead a large team of technical experts across leading edge science and technology topics related to the specialised manufacturing, testing and ultimately qualification of components for Fusion power plant (particularly fusion reactor in-vessel-components) to meet the industries emergent needs. Provide leadership, technical advice and direction in a broad range of fields across manufacturing technology and equipment qualification for fusion (or extreme harsh) environments. This includes:

- Provides technical direction and leadership of research activities and development of staff.
- Lead on the development of new scientific and engineering methods/techniques.
- Support senior management in development of strategy at UKAEA.
- Recruit and build a team of experts from the ground up, aligned to the needs of the Fusion Technology strategy.
- Based from Rotherham, lead the group capabilities across the Fusion Technology Yorkshire and Culham sites.
- Leverage internal capabilities to develop fusion and non-fusion work areas, particularly by securing collaborative research activities, grants and contracts.
- Proactively form and maintain links with external professional networks and universities.
- Influence the work of UKAEA & international programs.
- Apply knowledge, skills and experience to understand, influence, drive and negotiate with internal & external customers and colleagues.
- Critically assesses recommendations for the development of new examination, testing and qualification techniques, in the context of the wider organisations priorities and from broad experience of related manufacturing sectors and industry.
Accountabilities:

- Provides leadership, technical advice and direction in a broad range of fields related to manufacturing technology and equipment qualification for Fusion specific environments.
- Lead a team that, over time, develops specialist capabilities to support the emergent needs of fusion, these may include but not be limited to; thermo-hydraulics/mechanics, heat transfer, magnetic field effects, concurrent process and environmental effects, ageing and design life analysis, NDE/NDT advancements, joining techniques, high value advanced manufacturing techniques and related codes & standards development.
- Be an expert in at least one relevant field, with a broad general understanding of other topics.
- To source and build relationships to secure potential external work and coordinate bids in new work areas.
- Ensure projects are resourced and managed to time and cost in accordance with UKAEA management systems
- Ensure a safe working environment and safe working procedures in accordance with UKAEA safety policy
- Ensure suitably qualified and experienced resource is available to meet UKAEAs internal programmes and external customer needs.
- Advise and recommend the strategy for business development in the field.
- Lead in maximising the value to UKAEA of developing and existing research facilities, such as the flagship experiment CHIMERA.
- Influence external contracts to align programmes with UKAEAs needs.
- To act as line manager to appointed staff, setting individual objectives aligned with those of the Department and ensuring Training and development.
- Develop the right culture and encourage a motivated and innovative workforce.
- Represent UKAEA in external forums e.g. workshops, conferences.
- Delivers talks/lectures on behalf of UKAEA
- Supervise up to 5 PhD or masters projects at any one time.

Budget Responsibility:

Up to £500k, dependant on experience.
**Specific Qualifications/Experience:**

- Master’s Degree or higher in engineering, physics, technology or similar scientific field, preferably with Chartered status of a relevant institution.
- A subject matter expert in a relevant field
- Through demonstrable experience is able lead and motivate individuals and teams; and encourages people to reach their full potential behaviourally and technically.
- Highly self-motivating and demonstrable initiative
- Demonstrable experience of initiating and executing successful R&D programmes
- Background or experience of multi-disciplinary R&D programmes
- Excellent verbal and written communication, able to build lasting relationships with stakeholders from all backgrounds.

**Strong track record in field of nuclear physics and technology**
- Broad knowledge spanning nuclear applications including fusion, fission and spallation
- Leading technical expert in:
  - Advanced nuclear instrumentation technologies
  - Radiation transport and activation methods for nuclear applications
  - Radiometric analysis techniques
  - Nuclear security, safeguards and defence technologies
  - Experimental nuclear methods
- Chartered Physicist, Member of Institute of Radiological Protection, Member of the Nuclear Institute, Fellow of the World Nuclear University
- Excellent publication and oral presentation record in nuclear field

**Other Duties:**

- Present on behalf of UKAEA as required
- Forming relevant technical networks

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<tr>
<th>Technical/Professional</th>
<th>60%</th>
<th>Project Management</th>
<th>10%</th>
<th>People Management</th>
<th>30%</th>
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**Generic descriptors for all roles in this job family and level** *(This is standard information, please do not amend)*

The first two descriptors relate to an overview of the role for the level within this job family

**Role Snapshot**

Job holders at this level provide technical leadership, influencing the direction of the Authority, international projects & collaborators. Job holders will manage teams and projects, leading, setting and delivering the scope for major projects.

**Typical Representative Duties**

Provide specialist/deep technical knowledge & direction in a complex area, influencing the work of UKAEA & international programs. May lead a team of engineers to develop the right culture & capabilities & encourage a motivated workforce. Influence & control project budgets. Define & manage Engineering projects to ensure delivery to required results within specification, time & cost parameters. Define appropriate processes & ensure compliance within own team/area of expertise. Authorise/sign off major project activities & milestones & reports to ensure quality & consistency of deliverables. Participate in site level projects as a representative of the Engineering function or other area of expertise. Define operating plans for the team based on wider strategic goals in order to provide clarity & define measurable results. Contribute engineering expertise to business development proposals &
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<tr>
<th>Decisions. Act as the Engineer in Charge or the responsible officer for safety of complex/critical plant and processes.</th>
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<tr>
<td><strong>Decision Making</strong></td>
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<td><strong>Analytical Skills</strong></td>
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<td><strong>Project Role</strong></td>
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<td><strong>Budget Management</strong></td>
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<tr>
<td><strong>Communication &amp; Influencing</strong></td>
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<td><strong>External Links</strong></td>
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<tr>
<td><strong>People Management</strong></td>
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<tr>
<td><strong>Typical Technical Expertise, Experience &amp; Skills</strong></td>
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<tr>
<td><strong>UKAEA Organisational Knowledge</strong></td>
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<td><strong>Behavioural Competencies</strong></td>
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<td><strong>Passion</strong></td>
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<td><strong>Innovation</strong></td>
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<tr>
<td><strong>Accountability</strong></td>
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<td><strong>Business-minded</strong></td>
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<td><strong>Delivery</strong></td>
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Selection methods

We follow a structured process to ensure our recruitment process is fair and consistent. Based on the quality of the applications we may choose to do a telephone screening initially should your application be shortlisted.

Our final selection process may involve a number of assessments of which you may be required to complete online prior to your interview or on the day.

On the day you will be required to attend a panel interview and in some cases you may be asked to deliver a short presentation to give you an opportunity to demonstrate your suitability for this role.

The assessment criteria for each role may vary, however in all cases the methods selected will ensure you are given a good opportunity to display your skills and experience.
Employee benefits

There is a friendly and collaborative atmosphere at UKAEA. Ideas and results are openly shared at weekly MAST and JET physics meetings and Culham colloquia give staff an opportunity to hear from external scientific speakers – both from the international fusion community and the wider scientific world.

Annual Leave
The Annual Leave entitlement for employees is 25 days (pro rata for part-time employees) rising to 28 days after five years of service and then to 30 days after ten years of service. In addition employees are entitled to 10.5 holidays (including bank holidays and privilege days). Employees work a revised working week to cover the days that fall between Christmas and New Year when the site is closed. This means that no annual leave needs to be saved to cover these days. Employees are able to carry over up to ten days annual leave to the next leave year, if they wish. There is also the opportunity to accrue time off in lieu of extra work carried out as overtime, instead of receiving a payment, subject to line manager’s discretion.
**Bonus scheme**
Employees are normally entitled to bonus payments depending on UKAEA performance in any given financial year. Milestones are set up in a way so that employees’ performance has an influence on UKAEA performance in a given area. Bonus payments are paid on an annual basis as a percentage of salary (maximum 7%).

**Flexible working**
UKAEA promotes flexible working to enable employees to maintain a healthy work-life balance. Depending on the business needs, this can range from part time arrangements to allow for ‘the school run’ or elderly care to occasional home working and the ability to flex hours to fit with lifestyle choices. UKAEA is also open to job sharing unless otherwise stated.

**Learning and development**
UKAEA is committed to developing all members of staff by offering a wide range of programmes and support to suit their individual career aspiration. UKAEA’s APS System gives all employees and managers the opportunity to highlight learning and development needs and opportunities throughout the year. In engineering these range from an advanced apprenticeship scheme certified by IMechE and IET, a graduate scheme also certified by IMechE and IET with IOP pending, we are similarly accredited for our Continuous Professional Development Schemes and are members of the IET Power Academy. In the physics field we offer PhD and MSc opportunities and Culham Research Fellowships. In addition to the structured development schemes we also provide individual development as needed by the business and career trajectories, including management development opportunities.

**UKAEA Discounts**
UKAEA Discounts is a free to use benefit, paid for by UKAEA, and offers numerous opportunities to regularly save money on normal everyday shopping. It has the potential to save you many £10s or even £100s per year.
Pensions
Employees of UKAEA are automatically enrolled into the UKAEA Combined Pension Scheme (CPS), which is a final salary defined benefit scheme. It includes the following benefits for members:

• A pension and lump sum payment at Normal Pension Age of 60. The pension is based on final salary and calculated as: years’ service x pensionable final earnings x 1/80th. The lump sum is: 3 x the annual pension;
• Options at retirement to convert lump sum into additional pension or to commute pension to additional lump sum;
• Options for early retirement or partial retirement;
• Death in service benefits including lump sum of 2 x pensionable final earnings and spouse and dependents pensions;
• Spouse and dependents pensions on death after retirement;
• Ill health benefits of payment of pension and lump sum with possible enhancement;
• Additional Voluntary Contributions scheme.
• Employee contributions qualify for tax relief and the UKAEA also contributes. Some benefits are reduced for service less than 2 years. Employees can opt out of the scheme. Further details of the scheme can be found at the following website:
http://www.uk-atomic-energy-pensions.org.uk
• Note: The CPS is expected to close for future accrual of benefits at some point in the future as part of the reform of all public sector pensions, and most UKAEA employees and all new employees will then be transferred to the Civil Servants and Others Pension Scheme (known as alpha) for future benefits.
• This is a Career Average Revalued Earnings (CARE) defined benefits scheme. It includes very similar benefits to the CPS, but the pension is built up each year based on 2.32% of salary and inflation each year.
• Further details of the alpha scheme can be found at the following website:
http://www.civilservicepensionscheme.org.uk/members/alpha-guide/
• Benefits earned in the CPS at the date of the change to the alpha arrangement will be frozen and when paid will be based on service to the date of joining the alpha scheme and pensionable final earnings when the member leaves the alpha scheme or leave employment (whichever is earlier)
• i.e. the link to final salary for CPS benefits is maintained
Health and wellbeing
Research has shown that healthy and happy staff contribute more to their employer as well as the nation as a whole. As part of our health and wellbeing programme UKAEA provides a range of free benefits helping to further improve your health and wellbeing. There is an on-site Occupational Health service. There is also an Employee Assistance Programme which is a welfare initiative, available to all staff, by telephone, giving support and counselling, covering a wide variety of subject areas, such as financial, personal, work-related and legal.

Emergency family leave (Time off for dependants)
At discretion a member of staff can request time off work to deal with an emergency involving a dependent. This leave is to allow employees to deal with unexpected or sudden problems and to make longer term arrangements as necessary. There is no qualifying period necessary for this leave and depending on circumstances some of the time off may qualify to be paid.

Maternity leave
Where an employee qualifies for contractual maternity pay (at least one year’s effective service), she will receive her normal rate of pay during the 26 week ordinary maternity leave period.

Following this the first 13 weeks of additional maternity leave will be paid at the appropriate statutory rate of SMP. The remaining 13 weeks of additional maternity leave will be unpaid.

Adoption leave and Paternity leave schemes are also offered.
Relocation
New entrants who are required to move their home to take up a permanent appointment may qualify to be given some assistance towards their removal expenses. This is subject to an HMRC ceiling of £8,000.

Cycle to Work Scheme
The scheme provides employees with the opportunity to purchase a new bike through a salary sacrifice scheme. The money will come out of your monthly salary (before tax). Employees are entitled to borrow up to £1,000 for a bike and accessories.

Parking facilities
Parking facilities are available across the site. Parking spaces are located close to offices and are free of charge. The site is monitored 24h/7.

Mentoring scheme
To help support its staff through their careers and professional development UKAEA have introduced a mentoring programme. Mentoring is a relationship in which one person, the mentor, helps another, the mentee, to discover more about themselves, their potential and capability. It can assist an individual by enabling them to seek guidance, support, help and feedback. The mentoring programme is a formal process which will be regularly reviewed and monitored. It recognises that individuals have different goals and aspirations and it endeavours to meet the individual’s requirements and needs as well as those of UKAEA.

Eating and Drinking
At UKAEA, catering outlets such as shops, a sandwich bar and a restaurant have a great range of food and drinks for staff to choose from throughout the day. The majority of the food is made in-house.

There is also a Costa Coffee outlet offering fresh coffee and cakes.
Social clubs and events
There is a social club (CSSA) which organises discounted theatre trips to various London theatres for its members, as well as supporting a wide range of clubs and societies including Craft, Yoga, Jive, Netball and Kung Fu. UKAEA also runs an annual softball tournament as well as other seasonal activities throughout the year. During winter, colleagues have been challenged to a Winter Triathlon which includes a pub-style quiz, a skittles tournament and traditional Aunt Sally game.
Athena Swan
UKAEA is delighted to have been awarded the Athena SWAN bronze award which recognises the commitment of advancing the careers of women in Science, Technology, Engineering, Maths and Medicine (STEMM) employment in higher education and research. The Athena Swan panel works continuously on new initiatives to support greater gender equality in the workplace.

Core values
UKAEA prides itself on being a great place to work and are committed to the continual development of our people. The core values are Passion, Innovation, Leadership and Business Minded.
How to apply

Apply online
Visit [http://www.ccfe.ac.uk/Jobs.aspx](http://www.ccfe.ac.uk/Jobs.aspx) to apply via our online portal. You will need to complete an online application form. You will also be prompted to upload an updated CV and a cover letter.

Note: You may be asked to answer competency related questions. Please type your response in Word and then copy & paste on to the online application form. The system may time out and you are unable to save your responses and come back later. However, the rest of the application can be completed at your convenience and you can save your responses for review at a later stage but before final submission.

Please be advised that this vacancy may close earlier than stated if large or sufficient numbers of applications are received.

Help and assistance
For assistance or further information please email our recruitment team at recruitment@ukaea.uk
The UK Atomic Energy Authority’s mission is to lead the commercial development of fusion power and related technology, and position the UK as a leader in sustainable nuclear energy.

Find out more
www.gov.uk/ukaea