**Job Description**

**Job Title:** Manufacturing Engineer – Machining Process Engineer

**Career Level: 4**

**Department or Business Sector: HTRC**

**Location**: Coventry

**Reporting to (manager’s job title): Manufacturing Engineering Manager**

***Please read the notes on pages 2 and 3 before completing these sections.***

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| **Heading:** | **Description** |
| 1. **Job Purpose** | As a Manufacturing Engineer based at the High Temperature Research Centre (HTRC) in Ansty, you will conduct research and improvement activities related to the design and manufacture of turbine components. The HTRC is a collaboration between the University of Birmingham and Rolls-Royce and is equipped with state-of-the-art equipment for investment casting, machining, and advanced metrology of single crystal components.  The Centre has three key aims:   1. Design & make of turbine components for engine development projects 2. Develop novel design and manufacturing techniques to enable future design styles and manufacturing technologies 3. Accelerate cost reduction and casting/machining yield improvement activities for Turbine components.   You will work within our co-located design and manufacturing engineering teams within the HTRC and in close collaboration with a wide range of researchers from the relevant academic fields.  Manufacturing engineers are responsible for the method of manufacture that delivers component requirements and support both process engineering and project delivery tasks. Whilst an engineer may have a particular process or project focus, they will be able to support both functions. **This role has a focus on Process Engineering task for the centres machining processes including (High Speed EDM – Drilling, CNC Milling and Wire EDM,)**  Process engineers are primarily accountable for the equipment and process methods used within the HTRC, they drive best practice and continuous improvement into their process area whilst acting as a central point for knowledge management and communication across the HTRC and externally with suppliers, customers and partners. They also play a key role in supporting and liaising with the operational teams ensuring safe and reliable equipment and processes.  Project Engineers understand customer requirements and translate them through consultation into a method of manufacture managing the associated technical package. They create, manage, and deliver the project using planning, risk management and cost tools whilst effectively managing key stakeholder expectations. They also act to ensure validation and substantiation of the component and manage any arising non-conformance or quality concerns to ensure compliance to specifications and a safe method of manufacture. |
| 1. **Communication** | You will maintain regular communication across the internal team within the department and engage key customers outside the centre to understand requirements.  You will be able to communicate and exchange ideas effectively and concisely both verbally and in writing. You will be collaborating with colleagues both internally and externally (Operations, Designers, Researchers and Project Teams) to achieve goals and objectives and seeks and acts on feedback from colleagues. |
| 1. **Innovation** | The HTRC has innovation at its heart, as a manufacturing engineer you will be part of a team leading activities to:   * Developing proof of concept solutions * Impact partner profitability * Generate world leading research and innovation * Develop expertise in single crystal casting and machining technology for Turbine components |
| 1. **Knowledge** | You will be:  Degree qualified or demonstrate equivalent technical capability based on practical knowledge and experience  Have sound understanding of manufacturing engineering and component engineering principles  Ideally demonstrate technical knowledge of turbine components and/or process knowledge associated with investment casting and/or machining of turbine components  Have experience with some of the following: High Speed EDM, Wire EDM, CNC Milling. Machining of metallic and ceramic materials.  Be equipped with a strong functional skill set (problem solving, programme management, change control, risk management and budgetary control)  Candidates with experience in some of the following will be strongly positioned to perform this role:  Experience working in research environments  Worked with customers to optimise the design of products (Design for Manufacture - DfM) to ensure an optimum manufacturing method can be generated.  Defined tooling, jigs and fixtures including experience with CAD software packages  Experience in CAM activities  Created and managed experiments to understand and develop manufacturing and component capability,  Created and managed methods of manufacture and technical packages allowing component manufacture and delivery.  Knowledge of inspection requirements and experience developing inspection capabilities  Resolved non-conformance to ensure an in-spec product is delivered to the customer.  Acted to continuously improve current and developed novel manufacturing capability for turbine component manufacture  Influenced the creation and deployment of future manufacturing capability roadmaps to ensure world class processes are operated.  Understood equipment requirements, developed equipment capability  Ensured stability and reliability of process equipment and process methods  Developed and coached Technicians in manufacturing processes.  Benchmarked external capability |
| 1. **Person Specification** | All aspects of the role are to be carried out as an exemplar within the business in adhering to the MTC RIGHT way:   * Acting responsibly, putting MTC’s interests ahead of personal ambition; * Providing inspirational leadership to all who come in contact with you; * Delivering in the broadest sense a great working environment; * Leading with humility, honesty and integrity in all that you do; * Promoting teamwork, supporting through difficult times and collectively celebrating our successes.   In addition:   * Recognised as a self-driven, proactive team player with strong communication skills. |

**Definitions**

**1. Job purpose:**

*Provide an overview of the job, its context in the company;*

*Describe the level and scope of influence and authority that the position should have (is this within the immediate job area or more widely across a business unit or potentially the business as a whole?);*

*Describe the level of impact by reference to the daily scope of the role – does the role holder follow clearly defined procedures under close supervision or is there latitude to set objectives or even strategies?*

**2. Communication:**

*Outline the scope, extent and nature of the communication that this role is responsible for, on a regular basis;*

*What communication skills are required? (to convey information, to reach agreement, to manage communication?);*

*What is the context: internal or external?*

**3. Innovation:**

*To what extent is the role holder required to identify, develop and make improvements to ideas, techniques, procedures, services or products?*

*What is the level of complexity? (are problems generally in one area and well defined or are they multi-dimensional?)*

*Is the role holder expected to make minor changes or to enhance or replace entire processes?*

**4. Knowledge:**

*What is the nature and extent or depth of knowledge required in this job to achieve objectives and add value?*

*Knowledge may be acquired through formal education and/or work experience;*

*First specify the depth of knowledge to be applied and then identify whether the role holder would apply the knowledge as a team member, team leader or manager of teams.*

**5.** **Person Specification:**

*The type of person suitable for the role:*

*For example, does this require someone who enjoys working with lots of detailed data, or someone who enjoys working with customers or potential customers;*

*Would this role be suited to someone with high levels of resilience and an aptitude for working under pressure, to meet deadlines?*

*What sort of prior experience would be necessary or helpful*