

## **E&SD Mechanical Designer**

To be a design engineer working on the development of small electro-mechanical safety devices for nuclear weapons.

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Discipline	Engineering - Mechanical
Employment Basis	Full Time
Location	Aldermaston
Salary Range	£20,000 - £40,000
Job Reference	27/06/01/021261

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### **Key accountabilities**

- To be a design engineer working on the development of Strong Link Safety Barriers (SLSB's). These are small electro-mechanical devices forming the main safety components in a Nuclear weapon.
- Become a technical expert in all aspects of design & functionality of stronglink safety barriers. This will include behaviour of complex mechanisms, 3D modelling, dynamic modelling, and material properties.
- Be involved in the definition of stronglink requirements and specifications to satisfy weapon safety principles and safety criteria (SPSC) and AWE weapon surety aims.
- Carry out innovative design work on electro-mechanical systems whilst ensuring, key functionality, safety and reliability are maintained within a design. Conduct relevant analysis and calculations to aid design, reliability studies and test simulations. Produce the necessary design and analysis reports and documentation.
- Define supporting experiments that will be necessary to validate design models.
- Provide expertise across all aspects of development projects throughout the design, production and test cycle.
- Be involved in the definition of the necessary testing programmes.
- Liaise with sub-contractors and internal groups, including integration teams and manufacturing teams, on stronglink projects and support work. Actively participate in design reviews.
- To carry out procurement activities as required.
- Act as deputy to technical leader when required. Work with the Technical Leader to progress internal and external stronglink programmes with applied engineering expertise.

### **Responsibilities**

- To be a design engineer working on the development of Strong Link Safety Barriers (SLSB's). These are small electro-mechanical devices forming the main safety components in a Nuclear Weapon.

### **Qualifications**

- Minimum Degree or HNC level in a mechanical, electro-mechanical or manufacturing discipline.

### **Knowledge**

- To understand the safety philosophy for nuclear weapons as embodied in the MOD safety requirements for nuclear weapons.
- To understand the principles of electro-mechanical systems, environmental testing and manufacturing techniques for small assemblies and components.

### **Experience**

- Experience of working in a capability and technical development environment.
- Experience in the design, manufacture and testing of small electro-mechanical systems would be an advantage.
- Experience of progressing projects from concept designs through to manufacturing drawings.

### **Skills**

- Design skills relevant to producing concepts and detailed designs of small mechanical mechanisms and electro- magnetic drives.
- The use of 3D CAD systems (preferably Unigraphics)
- Design calculations and analysis
- The use of computers tools for modelling mechanical dynamics (eg. ADAMS) and / or Finite Element methods (eg. ANSYS) would be an advantage.

### **Behaviours**

- To be able to work in a dynamic team environment
- Be able to effectively communicate work issues mainly within the team
- Be able to plan multiple tasks and manage time effectively
- Be able to delegate tasks effectively

### **Special Requirements**

None