



ProTom International Holding Corporation Job Description: Senior Mechanical Engineer

Summary:

Under the direction of the Director of Engineering Mechanical Systems, the Senior Mechanical Engineer (SME) will be involved in and lead aspects of the design, analysis, fabrication, installation, validation, verification, documentation, certification, support, upgrade, and maintenance of ProTom's proton therapy systems. At times the SME will be required to manage a subset of mechanical projects. Engineering skills and expertise will be applied to; large rotating mechanical structures and associated drive machinery, dynamically loaded structures, robotic positioning devices, precision mechanical components/assemblies, electronic packaging, hydraulic and pneumatic circuits, process and utility piping, vacuum systems, and proton beam control devices. The SME will participate in teams for both internal and external development projects. The SME must be well versed in documenting requirements in such a way that they can be partitioned into a mechanical system architecture with direct downward and upward traceability to design requirements such that they meet the ProTom Quality Management System (QMS) requirements.

Principal Responsibilities:

- Lead and perform mechanical/structural design, engineering, fabrication support, installation, verification, and ongoing development of the *Radiance 330* components as directed by the Manager of Mechanical Engineering.
- Prepare and document specifications; ensure designs meet ProTom requirements.
- Perform failure analysis of equipment malfunctions of the Radiance 330 system, including accelerator and beam transport systems, rotating gantry structures, beam delivery, patient positioning, computer control and safety systems components that fall under ProTom's area of responsibility. Recommend and implement solutions.
- Assist in the design and lay out of radiation room facilities (machine placement and installation scale drawings are required in plan view and elevation; electrical and mechanical interface and control are drawn in schematic and sometimes 3D CAD detail).
- Share expertise and mentor staff.

Qualifications:

- Bachelor of Science degree in Mechanical Engineering; MSME degree is preferred.
- Candidate will possess a minimum of 15 years mechanical engineering experience. Experience working in highly regulated industries and on complex capital equipment desired both independently and within a cross-functional team of engineers.
- Candidate will have been responsible for a significant portion of the development, analysis, documentation, fabrication, assembly, troubleshooting, testing, commissioning, and certification of complex capital equipment.
- Proficient in the use of a 3D modeling software; SolidWorks experience is preferred. Expertise in the use of Finite Element Analysis (FEA) to evaluate large movable structures and machinery components. Additional experience in the use of CFD analysis tools is a plus.

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- Experience with PDM systems; SolidWorks EPDM is preferred.
- Proficiency with principles and practices of mechanical design, structural design, mechanisms, hydraulics, pneumatics, and electronic packaging. Familiarity with facility mechanical equipment is a plus.
- Experience in design for high cycle fatigue and vibration management. Familiarity with seismic analysis a plus.
- Experience with engineering vacuum systems is a plus.
- Experience in the design and test of precision motion control systems.
- Experience in the selection and specification of materials.