



Job Description

Job Title: Principal Staff Engineer

FLSA: Exempt

Department: Engineering (Reports to President)

Date: 7/2020

Position Overview:

Provides program management and/or senior level engineering support for projects – typically new product development and ongoing product support. Will often serve as the lead engineer on development projects providing technical support to Program Management. Provides technical support in other functional areas as required. Mentors and coaches more junior engineers in the company. Researches new products, product enhancements, and product redesign that align the product development function with the goals of the organization. Helps evaluate the potential and practicality of products in development. Supports proposal development activities to include project planning, labor and material cost estimating, and providing input or taking the lead role in writing the technical volume and supporting the management and cost volumes. Relies on experience and sound judgment to plan and accomplish goals. Design creativity and direction is expected with a solid understanding, appreciation and support for specialty engineering (manufacturing, quality, reliability, safety, etc.) requirements. Self-directed with positive attitude toward helping the entire program team succeed to include helping colleagues across functional boundaries, as required. Strong written and verbal communication is required within Safe and with the external customer. Good situational awareness skill and ability to provide the appropriate response(s) are a must. Can-do attitude is a must.

Educational Requirements:

Bachelor's degree in mechanical engineering plus 12 years of product design and development experience is required or equivalent education and experience. An advanced engineering degree is preferred.

Essential Job Functions:

- Manage and support new product development efforts through research, rapid conceptual product development, and proposal writing.
- Manage, develop and mature new and derivative products in various life cycle stages. Involves conceptual, preliminary, and detail design of complex components and systems/mechanisms, drawing creation, and associated tolerance analyses.
- Prepare and conduct preliminary, critical, and interim technical design reviews.
- Perform stress analyses/evaluations using constitutive equations, numerical and finite element methods, and empirical methods.
- Evaluate the results of detailed stress analyses and incorporate them into the design of components and systems.
- Prepare and process engineering change notices per internal procedures.



- Supervise a variety of product development, validation, and qualification testing, typically in accordance with MIL-STD-810 and similar industry specifications.
- Provide technical support to manufacturing, quality and procurement.
- Provide assembly support to fabricate prototypes and test articles in house.
- Write statements of work for subcontractors and support/supervise their work.
- Write test plans, test procedures, and test reports to support development, validation, and qualification testing.
- Setup and perform a variety of static and dynamic component and system tests.
- Write progress, compliance, technical and other similar reports.
- Evaluate and scope work to meet the objectives of the task.
- Manage effort to satisfy requirements within schedule and budget.
- Other job functions and duties as assigned by management.

Job Requirements:

- Fully functional in the application of best practices of mechanical engineering.
- Capable of correctly applying and interpreting geometric dimensioning and tolerancing (GD&T) principles.
- Knowledge of, and experience with, solid modeling using SolidWorks® or a related package.
- Functional with Microsoft Office Word and Excel and possess a working knowledge of Microsoft Project.
- Advanced engineering drawing (blueprint) reading including GD&T.
- Basic mechanical skills for supporting prototype assembly.
- Ability to operate basic machine shop equipment is a plus.
- Support subcontractors performing structural and other analyses on designs.
- Work in a self-directed manor as a member of a product development team.
- Complete assigned program deliverables on schedule and within assigned budget.
- Accomplish assigned program deliverables completely and accurately.
- Accept ownership of assigned tasks and follow through with accurate and thorough status communication.
- Continually demonstrate excellent teamwork.
- Excellent situational awareness skills and abilities.
- Knowledge of stress analysis to include finite element analysis (FEA) modeling and results assessment.
- Capable of estimating labor and materials costs for product and technology development projects.
- Demonstrated outstanding verbal and written communication skills with internal team members and external customers.

Physical Requirements:

The employee is required to talk, see and hear. The employee is required to sit for extended periods of time and use their hands and fingers, and computer keyboard. The employee is occasionally required to stand, walk, and reach with arms and hands. Vision abilities required by this job include close vision. Some light lifting, up to 25 lbs, is required.