



**Zoomlion Heavy Industry N.A., Inc.**

## **Sr. Electrical Engineer**

---

**Department:** Engineering

**FLSA Status:** Exempt

**Grade/Level:** Senior

**Job Type:** Regular

**Work Schedule:**

Weekdays Monday through Friday unless traveling.

Hours flexible to meet project needs.

**Job Status:** Full Time

**Reports To:** Eng. Manager - Control Systems

**Amount of Travel Required:** Up to 10%

**Positions Supervised:** None

---

### **POSITION SUMMARY**

Research and develop electrical systems and devices for use on a variety of off-highway, industrial, agricultural, and heavy equipment construction machinery. Specify electronic system components used on machines and develop wiring harnesses designs. Specify vehicle requirements for electrical subsystems and harnessing. Work with cross-functional teams domestically and off-shore teams to effectively develop product designs from conception to production. Evaluate components, tools, and parts for cost, quality, reliability and performance. Research and evaluate competitors' products and marketplace trends to develop innovative designs that meet or exceed our customers' expectations.

---

### **ESSENTIAL FUNCTIONS**

#### **Reasonable Accommodations Statement**

To accomplish this job successfully, an individual must be able to perform, with or without reasonable accommodation, each essential function satisfactorily. Reasonable accommodations may be made to help enable qualified individuals with disabilities to perform the essential functions.

#### **Essential Functions Statement(s)**

- Lead cross-functional design teams to evaluate and identify solutions to problems, develop review, and approve high-level requirements, review and approve design specifications based on requirements, and ensure engineered solutions meet the specifications relating to control systems.
- As a leader, define and design heavy machinery electrical systems with internal and external stakeholders, working closely with the hydraulic power and structural design engineering teams
- Gather requirements, document designs, and manage design documents
- Function as a leader and individual contributor with defining system architecture, capabilities, hardware verification, and validation plans
- Identify multiple design solutions and assess the alternatives based on all identified constraints including cost, schedule impact, space, power, safety, usability, reliability, maintainability, and availability
- Plan development activities including detailed project plans and implementation schedules as defined by our development processes
- Plan and coordinate validation tests and verification setups in the lab on hardware in the loop (HIL), an electronic test cart, and on prototype machines
- Lead requirements and architecture reviews with local and remote teams
- Research and stay current on the latest relevant technologies and the markets we serve

## **POSITION QUALIFICATIONS**

### **Competency Statement(s)**

- Project Management - Ability to organize and direct a project to completion
- Accountability - Ability to accept responsibility and account for his/her actions
- Communication, Oral - Ability to communicate effectively with others using the spoken word
- Communication, Written - Ability to communicate in writing clearly and concisely
- Creative - Ability to think in such a way as to produce a new concept or idea
- Leadership - Ability to influence others to perform their jobs effectively and to be responsible for making decisions
- Problem Solving - Ability to find a solution for or to deal proactively with work-related problems
- Technical Aptitude - Ability to comprehend complex technical topics and specialized information
- Innovative - Ability to make decisions or take actions to solve a problem or reach a goal
- Detail Oriented - Ability to pay attention to the minute details of a project or task
- Deductive Reasoning - Ability to apply principles of logical or scientific thinking to a wide range of intellectual and practical problems
- Analytical Skills - Ability to use thinking and reasoning to solve a problem
- Judgment - The ability to formulate a sound decision using the available information
- Conceptual Thinking - Ability to think in terms of abstract ideas
- Research Skills - Ability to conduct a systematic, objective, and critical investigation
- Decision Making - Ability to make critical decisions while following company procedures
- Organized - Managing time effectively and following a systematic method of performing a variety of tasks
- Self-Motivated - Ability to be internally inspired to perform a task to the best of one's ability using his/her own drive or initiative
- Systems Analysis - Ability to determine how a system should work and how changes in conditions, operations, and the environment will affect outcomes
- Technical Aptitude - Ability to comprehend complex technical topics and specialized information

### **SKILLS & ABILITIES**

**Education:** Bachelor's Degree (four-year college)  
Required field of study: Electrical Engineering  
Master's degree is a plus

**Experience:** 10 plus years of experience in developing industrial electrical control system designs with component selection and system level requirements capture.

- Proven track record with developing new hardware for electrical control systems
- Skills and knowledge with CAN using J1939
- Experience related to the design and diagnostics of mechanical, electrical, and hydraulic systems
- Knowledge of applicable safety standards required to gain certification in North America and the EU
- Understand the design tradeoffs with environmental affects to create a robust and reliable design

- Microsoft Office 360:
- Outlook, Word, Excel, PowerPoint, SharePoint, and Visio
  - Able to download and install various software packages or tools for evaluation
- Computer Skills:**
- None required.
- Certifications & Licenses:**
- Deep knowledge of all phases of system engineering lifecycle: requirements gathering, concept analysis, design, development and implementation, validation testing, standards testing, and release
  - Technical leadership skills with strong interpersonal skills and ability junior engineers
  - Experience with modeling and simulation tools (e.g., MATLAB & Simulink) is a plus
  - Capabilities with understanding, developing, and testing control software and graphical user interfaces is a big plus
- Other Requirements:**

## PHYSICAL DEMANDS

- N (Not Applicable)** Activity is not applicable to this position.  
**O (Occasionally)** Position requires this activity up to 33% of the time (0 - 2.5+ hrs/day)  
**F (Frequently)** Position requires this activity from 33% - 66% of the time (2.5 - 5.5+ hrs/day)  
**C (Constantly)** Position requires this activity more than 66% of the time (5.5+ hrs/day)

### Physical Demands

		Lift/Carry	
Stand	F	10 lbs or less	O
Walk	F	11-20 lbs	O
Sit	F	21-50 lbs	O
Manually Manipulate	O	51-100 lbs	N
Reach Outward	O	Over 100 lbs	N
Reach Above Shoulder	O		
Climb	O	Push/Pull	
Crawl	N	12 lbs or less	O
Squat or Kneel	N	13-25 lbs	O
Bend	O	26-40 lbs	O
Grasp	O	41-100 lbs	N
Speak	F		

### Other Physical Requirements

#### WORK ENVIRONMENT

Office environment in a controlled atmosphere building.