Pulsed Power Engineer / Power Semiconductor Electrical Engineer

“History is made by those with the passion and vision to bring the brightest ideas to life”

There’s no better place to do that than Lawrence Livermore National Laboratory (LLNL). From working at the frontiers of climate research, to using the world’s most powerful supercomputers, to reaching toward fusion at the National Ignition Facility (NIF), the laboratory has always been at the forefront of the world’s most important scientific discoveries. Shouldn’t you be able to say the same thing about your career?

LLNL is seeking experienced Pulsed Power Engineers. Will support the National Ignition Facility (NIF) by designing new capabilities and upgrades for NIF’s 400 MJ flashlamp power supplies and state-of-the-art Plasma Electrode Pockels Cell (PEPC) systems. NIF, which houses the world’s highest energy pulsed laser system, is capable of producing over 1.8 MJ of optical energy. Many of NIF’s subsystems have pulsed power technologies at their core and there is a need to design next-generation pulsed power systems for NIF and new laser systems. Will report to the Pulsed Power Group Leader and have full accountability for the engineering design and development of new hardware as well as system upgrades to continually improve system performance and reliability. Will also provide oversight to operations and maintenance technicians.

Specific Job Duties Include:

- Designing pulsed power and power electronics hardware for state-of-the-art laser systems.
- Providing engineering expertise and design capability to ensure the reliable and safe operation of the pulsed power systems on NIF.
- Developing and design improved high voltage solid-state pulse generators for the multi-pulse ARC PEPC system.
- Developing, maintaining, and presenting metrics for system reliability and performance; use those metrics to drive investments in system improvements.
- Working in multidisciplinary teams (e.g. mechanical and electrical engineering, physics, chemistry) to solve complex technical problems.
- Analyzing and model/simulate the electrical performance of system components under dynamic electrical loads and/or harsh electromagnetic interference conditions.
- Leading and/or participate in multi-disciplinary design/peer reviews of work to ensure that the experiments/tests, hardware, and data acquisition systems are safe and the experimental designs are technically sound.
- Providing technical guidance to external contractors fabricating customized electrical equipment, and experimental assemblies for experimental programs.

Key Qualifications

- MS in Electronics Engineering or equivalent level of demonstrated knowledge.
- Advanced knowledge of high voltage/pulsed power systems, including prime power.
• Significant experience in one or more of the following areas: pulsed power, power modulation/switching, grounding and shielding in a high EMI environment, or diagnostics/instrumentation systems associated with these areas.
• Significant experience designing, building, testing, and operating high-voltage pulsed-power systems.
• Significant experience performing computational modeling and analysis to understand and predict system performance using SPICE, MathCad, and/or Maxwell modeling tools.
• Significant experience conducting and participating in design reviews.
• Substantial experience documenting results in formal reports and presenting the results for peer reviews.
• Demonstrated ability to effectively manage multiple tasks, projects, and priorities.
• Advanced written and verbal communication skills and interpersonal necessary to effectively collaborate in a team environment and present and explain technical information.

NOTE: This is a Career Indefinite position. Lab employees and external candidates may be considered for this position

How to Apply

For a detailed position description and to apply online, please visit: http://careers-int.llnl.gov/jobs/4495281-pulsed-power-and-power-semiconductor-electrical-engineer

About Us

Lawrence Livermore National Laboratory (LLNL), located in the San Francisco Bay Area (East Bay), is a premier applied science laboratory that is part of the National Nuclear Security Administration (NNSA) within the Department of Energy (DOE). LLNL’s mission is strengthening national security by developing and applying world-class science, technology, and engineering that responds with vision, quality, integrity, and technical excellence to scientific issues of national importance. The Laboratory has a current annual budget of about $1.5 billion employing approximately 6500 employees. For additional information about the Lab, please visit https://www.llnl.gov/about.

LLNL is an affirmative action/equal opportunity employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, marital status, national origin, ancestry, sex, sexual orientation, gender identity, disability, medical condition, protected veteran status, age, citizenship, or any other characteristic protected by law.