Electrical Engineering

Construction

What is railway electrical construction?

Electrical construction involves field work and project management to deliver the construction or upgrade of electrical infrastructure equipment to deliver electrical power to run the trains on the rail system. The construction must deliver the electrical design to the defined scope, budget, quality, time and resource constraints whilst safety, efficiency and electrical standards are not compromised.

Basic equipment includes transformers, circuit breakers, switches, cables and transmission lines for the distribution and control of power and the overhead wiring to transfer the power to the train without posing danger to the commuter, the public, operators or maintainers.

What is the purpose of railway electrical construction?

Electrical Construction serves many purposes, some of which are:

- Safety – to construct electrical infrastructure that transfers power safely and reliably to trains and ensuring, commuters, the public, operators and the maintainers are not endangered by the transfer of this power.
- Efficiency – to manage and plan all tasks and resources associated with the project efficiently and effectively and ensure the end result is achieved.
- Scope - to deliver the client's agreed scope to the agreed quality and standards and within the allocated budget and time constraint. Also, recommend improvements to the existing system so that trains can operate effectively and reliably.

What are the career paths for electrical engineers?

Working in railway electrical construction offers a huge variety of tasks including:

- Planning, installing, testing and commissioning new electrical infrastructure
- Developing new equipment to fill the demands not met in the marketplace
- Managing and coordinating the upgrading of electrical infrastructure
- Supervising electrical contract works

These tasks lead to career opportunities in:

- Electrical Design
- Electrical Maintenance
- Electrical Construction Management
- Technical Standards
- Project Management

There is a demand for electrical engineers with expertise in all facets of railway electrical construction. This means there will always be career opportunities for people who pursue a career in any aspect of railway electrical construction in Australia and overseas.

What kind of electrical engineer is suited to working in a railway electrical construction environment?

Electrical construction attracts electrical engineers who are dedicated and committed to their profession and are always ready to face new challenges and to learn new technology. They seek the certainty that what they do, really matters.

You need to:

- be ready to take responsibility for your decisions and installations
- like problem solving and providing feedback to electrical design, electrical standards or maintenance teams to prevent recurrence of similar problems
- want to manage electrical infrastructure projects and have interaction with multi-discipline teams to get the job done safely, on time and cost effectively.

What subjects should an electrical engineer study at university to have a career in electrical construction?

The electrical engineers currently working in the electrical construction areas tend to have a sound knowledge of electrical theory, particularly in power and distribution, and to have an interest in construction. The best way to learn about railway electrical construction is through on the job training and attending in-house courses.

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