



Industrial installations

Mott MacDonald has strong capability and a long track record in major industrial power projects, including management of multi-disciplinary projects, troubleshooting and electrical design services integrated with the client's process design team.

Complete design services

Our services include:

- Design checking
- Detailed construction planning, including outage planning
- Detailed design and engineering of power systems, including civil works
- Earthing calculations
- Feasibility and technical studies
- Outline system design
- Overall project management leading up to commissioning and handover to the client
- Plant selection
- Site supervision of installation, including site safety
- Studies and recommendations for power factor control

Mott MacDonald can provide a total plant design team or electrical service that will work closely with the client's plant team whilst also providing a comprehensive service in electrical systems engineering up to the highest voltages. This is becoming crucial as more industry plant operators contemplate the need to move to high voltage operations to cater for the large amounts of power required by modern industry processes.





Petrochemical plants

We have a leading track record in petrochemical plants where the integration of electrical systems into process engineering is crucial to reliable, continuous production. Key drivers for such plants are different to utility networks and the cost versus reliability financial balance is often very different, leading to alternative engineering solutions. Constraints are often more stringent in terms of available space and the need to integrate with other services, such as steam, fuel, water, air, gases and so on. This makes the solution a total one rather than simply an electrical one.

Mott MacDonald has worked extensively on:

- Offshore oil and gas production facilities, fixed and floating
- Onshore oil and gas production facilities, grid connection and islanded
- LNG liquefaction plants, connected and islanded
- Refineries, connected and islanded

Troubleshooting

Mott MacDonald is often called in to carry out troubleshooting on industrial plants with specific problems, such as high harmonic distortion, flicker or supply unreliability. Our experience on a vast range of plant types and our measurement capability enables us to deliver solutions and remedial measures effectively and efficiently so helping to provide the required high plant reliability to the process as soon as possible.

Recent projects

▪ Aluminium smelter plant, Middle East

Mott MacDonald carried out a complete study of a high voltage distribution system for one of the leading aluminium smelter plants in the Middle East. This included complete reconfiguration of the integrated HV distribution system, rectifiers supplying DC current to the smelter, harmonic measurement, analysis and design of filters.

We have provided similar studies and full implementation services for smelter plants and the steel and LNG industries world-wide over the last few decades. Mott MacDonald has the capability to undertake complete consultancy services for the implementation of all electrical services from captive power plants and distribution systems to special services such as the design of rectifier transformers and harmonic filters.



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