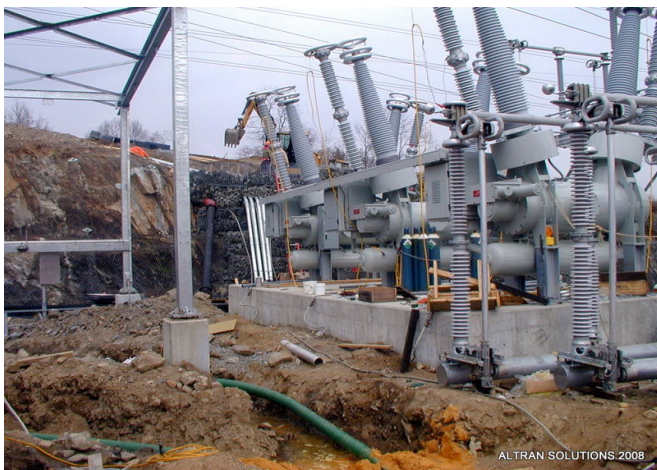


Substation Engineering & Design Services

Altran Solutions provides the highest quality services in all engineering disciplines to utility, industrial, commercial, and institutional customers as well as to independent power producers, rural electric co-operatives, municipal electric companies, and others involved in the production, transmission, distribution and utilization of electric power.

With clients throughout the country, Altran Solutions engineers and designs complete substations, additions to substations, and equipment replacements – both planned and emergency. We have experience designing the installation of circuit breakers, transformers, and switches - from low voltage to 500 kV.

As a customer centric organization, we are prepared to develop the appropriate design packages whether it's in accordance with client specific design standards or with Altran Solutions' design standards. Our engineers are considered the best trained, most experienced professionals in the industry. Their experience comes from years of working for and with utilities and independent power producers. This intimate knowledge of the needs and requirements of a utility enable our engineers to quickly and efficiently design the appropriate solution.



Typical examples of projects Altran Solutions has designed include:

- Feasibility studies and conceptual layouts
- Turnkey EPC package to owner standards
- Grounding system analysis and design
- Project and Construction Management
- 500 kV transmission line
- 345 kV, 230 kV, 138 kV, 69 kV, 24 kV, 13.8 kV and 12 kV substation additions
- Scheduled and emergency replacement of 345 kV, 230 kV, 138 kV, 69 kV, 24 kV, 13.8 kV and 12 kV power circuit breakers
- Complete 138 kV -13.8 kV and 69 kV – 12 kV Substations, including unit substations.
- GIS substation
- Installation of 345 kV series reactors
- Installation of Outdoor Switchgear
- Scheduled and emergency replacement of substation transformers and bus conductors
- Reinforcements to support structures
- Emergency replacement of support structures.
- Replacement of Protective Relays, Protective Relay Panels, and auxiliary equipment.
- Installation of shunt capacitor banks
- Protective relay schemes for:
 - Transmission Line Protection
 - Distribution Feeder Protection
 - Transformer Protection
 - Bus Protection
 - Series and Shunt Reactor Protection
 - Capacitor Protection
 - Breaker Failure

Our comprehensive, multidisciplinary approach allows us to handle complete designs including: site grading and cut and fill; foundations for structures, transformers, and circuit breakers; SPCC for oil filled equipment; support structures; control houses; ground grids; cable, conduit, cable trench, and duct banks, low voltage AC and DC panels; Relay Panels; perimeter security as well as all other features commonly encountered when designing outdoor, open air substations.

If you have any questions or would like to discuss in greater detail, please contact Michael Griffin at 321.363.4933 or via sales@altransolutions.com