



POWER SYSTEMS ENGINEERING

Services and solutions provider

REGIONAL ENGINEERED SERVICES

ANDRITZ works with your team to design, supply, commission, and support complete package solutions. We draw on our patented

technologies and skills to add value to your projects and help you release your full potential.

ANDRITZ

Power systems – from start to finish

SCOPE DEFINITION

- Site audits
- Stakeholder engagement
- Scope option analysis
- Schedule development
- Equipment specification
- Project risk analysis
- Project management
- Utility and regulatory engagement

CAPITAL COST ESTIMATION

- Preliminary drawing prep
- Tender / contractor bid package
- +/- 50%, 30%, 10% cap. cost est.
- Engineering costs
- Equipment costs
- Labour and material costs

POWER SYSTEM STUDIES

- Power system modelling (SKM, ETAP, EP etc.)
- System impact studies
- Transient stability
- Protection coordination, short-circuit, load flow, and reliability
- Generator integration studies
- Arc flash analysis and mitigation
- Harmonic analysis
- Power factor correction
- Load interconnection
- Electrical energy audits
- Advanced grounding studies w/ CDEGS
- Powerline design simulation w/ PLS-CADD

- Utility energy audit coordination
- Utility energy savings incentives
- Grid stability studies (PSS/E)
- Trip or disturbance root cause analysis

POWER SYSTEMS ENGINEERING

- Protection system design
- Capacitor and harmonic filter banks
- High voltage substation design
- Tap changer controls
- Islanding and load shedding systems
- Grounding systems
- Large motor applications
- Generator specification and design
- Governor and exciter controls

EQUIPMENT PROCUREMENT

- Global OEM purchasing agreements
- Engineering, procurement, construction
- 12kV – 230kV power transformers (local and overseas sourcing capabilities)
- Substation equipment
- 480V – 25kV switchgear
- GIS switchgear
- Steam and hydro turbine generators
- Generator AVR and governors
- HV switchgear
- Pre-fab electrical buildings
- Protection relays and panels
- Relay networking equipment
- MV MCCs

- Motors and motor control
- Load-shedding systems
- Full plant SCADA systems

CONSTRUCTION PACKAGES

- Substation layouts and sections
- Powerline design
- Electrical room layouts
- Single line diagrams
- AC/DC schematics
- Wiring drawings
- Relay cabinet drawings
- Scada diagrams
- Load shed systems
- Site general arrangements
- Grounding layouts
- Cable busses and trays
- Equipment BOMs
- Cable schedules
- Constructability planning
- Motor / load lists

ON-SITE COMMISSIONING

- Detailed commissioning plans
- Protection settings studies
- Relay commissioning
- Overall power systems controls
- NERC testing support
- Tap changer controls
- Generator controls
- Synchronization systems
- Substation and ground grid testing
- Utility declarations

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