



**alfanar** testing & commissioning



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# OVERVIEW

**alfanar testing and commissioning** offers professional expertise in the maintenance, testing and commissioning services of electrical power systems of various voltage levels.

We have vast experience in testing and commissioning various types of power systems, especially the extra high voltage substations up to 380kV. We have to our credit the testing and commissioning of over 100 projects. We provide services in Saudi Arabia and throughout the Middle East.

With key experience in the testing and commissioning of switchgears, power transformers, protection and control systems, substation auxiliary equipment, fiber optic cable splicing and generation equipment; **alfanar testing and commissioning** is committed to provide benchmark services to its clients.

# POWERVIEW





# OUR VISION

To be the premier service provider of complete field testing and commissioning of electrical power systems with attributes characterized by quality services, excellence in practices and values that nurture human potential.





# POWER STATIONS TESTING AND COMMISSIONING

We offer high quality and efficient testing, commissioning, maintenance and troubleshooting services.

We have tested and commissioned several power systems projects up to 380kV in Saudi Arabia and other Gulf countries.

## Our services include:

- Testing of relays of all types and makes
- Scheme and function testing for protection & control panels
- Testing of primary injections, busbars and transformer stability
- Testing of 132kV, 220kV, 380kV GIS
- Testing of outdoor switchgears
- Testing of fault recorders and sequence of event recorders
- Testing and calibration of energy meters
- Testing of 13.8kV and 33kV switchgears
- Performing on-site training and in-factory training
- Measurement of overhead line parameters
- Factory testing of panels
- Performing on-load measurements
- Testing of ACDBs, DCDBs, auxiliary transformers, NERs and RMUs
- Smart grounding measurements
- Providing testing engineers along with world-class test equipment, on a project hire basis



Testing in progress of GCCIA interconnection project at Al-Jubail.



Complete Testing at 380kV Substation at Rabigh



GIS testing in progress at the 380kV PP8 substation at Riyadh



Engineers in the process of final T&C at Thuwal Substation



Splicing & Testing of GCCIA Project-Hail-Qassim OHTL

# FIBER OPTIC TESTING

We specialize in splicing, termination, testing and commissioning of various types of fiber optic cables, like Underground Cables (UGC), Optical Ground Wire Cables (OPGW), and All Dielectric Self Supporting Cables (ADSS).

Our expertise in the field is recognized by the major utilities in the region, including the Saudi Electricity Company.

Using hi-tech instruments and equally reliable mobile units, our engineers are able to travel to remote areas to provide their services.

## Our services include:

- Pre-installation testing
- Post-installation testing
- Splicing of fiber optic cables
- Termination of fiber optic cables
- End-to-end testing
- Polarization Mode Dispersion (PMD) and Chromatic Dispersion (CD) testing
- Fitting of splicing boxes on towers
- Testing with client witnessing
- Pilot protection cable testing
- Pilot telecommunication cable testing





# HIGH VOLTAGE TESTING

With our mobile testing units, we provide complete on-field high voltage testing services. Our unique services, pertaining to cables and power systems, range from certification testing and equipment life assessment to emergency failure analysis and fault detection.

We provide high voltage testing services for switchgears, transformers, power cables, insulators and other transmission and distribution equipment rated up to 132kV, under lightning and switching impulse and power frequency voltages.

**Our services include:**

- High voltage test of 132kV GIS
- Partial discharge test
- High voltage test of 132kV XLPE cables
- High voltage test of 13.8kV, 33kV switchgears
- High voltage test of 13.8kV, 33kV XLPE cables
- VLF testing of equipment up to 100kV



H.V Test for Kandrah II Substation in progress



H.V Testing in progress at Rabigh Substation

# TRANSFORMER TESTING

We offer testing and oil treatment services for transformers, shunt reactors and capacitor banks. Our Facilities are fully equipped with the latest equipment necessary necessary provide these specialized services.

Our dedicated transformer repairing, rewinding and overhauling facility in Al-Jubail Industrial City also augments our activities, by providing an array of services pertaining to dry as well as oil-filled transformers.

**Our services include:**

- Oil filtration for power transformers, shunt reactors and capacitor banks
- Testing of transformers, shunt reactors and capacitor banks
- Vacuum services
- Performing Tan Delta test
- Performing frequency response measurement
- Measurement of inrush current
- Measurement of harmonics
- In-field or on-shop repairing/reconditioning
- Calibration of temperature gauges
- OLTC and fan test



Testing of Power Transformers for more than 200 Projects



Mobile Oil Treatment Machine at work at Ras Al-Zour substation



Oil Purification of 500MVA Power Transformer in process at Al-Jubail power station



# GENERATION TESTING

We offer testing and commissioning services for various types of power generation systems like gas, diesel, steam, and combined cycle units.

Apart from major overhauling and rehabilitation services, we also offer periodic maintenance services.

**Our services include:**

- Testing of rotors
- Testing of stators
- Testing of exciter systems
- Testing of generator protection systems
- Testing of control panels and DCS
- Testing of MCC and auxiliary systems
- Testing and calibration of instrumentation
- Maintenance and major overhauling



Complete Testing of Sharourah Power Plant in progress



Engineer at work for Generator Testing

# CALIBRATION SERVICES

We offer calibration, repair and maintenance services for various types of electrical & electronic equipment and instruments.

Our fully equipped calibration laboratory is approved by SASO.

**Our services include:**

- Calibration and repair services
- Technical asset management
- Recalibration reminder services
- On-demand and on-contract services



Protection System testing in progress at Sharourah power plant



Fully equipped mobile calibration lab



Calibration and repair of electrical testing and measuring equipment in progress at the AT&C Calibration Lab in Riyadh



# PROJECT MANAGEMENT

At **alfanar testing and commissioning**, we focus on delivering a project on time, to budget and to the highest appropriate level of quality. Upon acceptance to carry out testing and commissioning, our engineers organize frequent meetings with the client in order to determine and implement the suitable techniques and proper time schedules from testing until final commissioning.

We are committed to attend to customer requirements and specifications, which are treated with extreme importance.

By synergizing latest techniques and software, and most importantly, responsible personnel, AT&C manages resources to the optimum ensuring a quality project delivered on time and within the budget.



# PEOPLE

Our people are at the heart of our success and we strive to ensure that they have the opportunities to reach their full potential. Our people are given the support they need to allow them to play a full part in our business and help ensure delivery of a higher quality of service to our customers.

At AT&C, we are committed to provide our people with the training and assessment that will ensure they reach their own goals. We encourage our people to take every opportunity to better themselves – for the sake of their own career development and enjoyment, and to support in our vision to be the leader.

The trained and skilled manpower is one of the best in the region and several of the lead team members are continuously trained by the manufacturers. Keeping abreast of the latest technology, in High Voltage, Fiber Optic or Generation testing, our commitment to the personal development of our people ensures that an individual's career progression is clearly linked to their skills, potential and personal ambition.



Engineers performing relay and control test at Thuwal



Mechanical relay testing, one of the specialities of AT&C, in progress at Shifa substation



Primary current injection test in progress at PP8 project in Riyadh



An engineer conducting relay setting as part of the on-the-job training



Engineers performing SOE, Fault Recorders Test







# Projects / Clients

## Projects / Clients

- Wadi Jaleel outdoor substation - SEC-WOA.
- Ahssa substation - National Guard.
- Mina-2 in Makkah - SEC-WOA.
- 9013 substation at Al Shefa area south of Riyadh.
- Jeddah North - SEC-WOA.
- Al Haram substation - SEC-WOA.
- Upgrading of relay protection and signaling equipment for Ghazlan PP.
- PP9.
- SWCC-Shoaiba phase -3 water transmission system.
- Aljof power plant.
- Rabigh (2) power plant - SEC-COA.
- Expansion project of PP-8 in Riyadh city substation 9021 - SEC-COA.
- Safaniyah Aramco.
- HVDC back to back convertor station at Al Fadhilli.
- Qurayyah substation.
- Al Zour substation -Kuwait.
- Jasra substation.
- Jubail - 2.
- Al Kudmi.
- Saudi Kayan.
- Kandarrah 380kV - Jeddah.
- Hiteen 380,132kV BSP (# 9005) at PP -5.
- Sharourah power plant extension - SEC-SOA.
- SEC-COA 380 & 132kV substation # 9023 - PP -10.
- Jazan Economic City (JEC) 380/132kV.

A complete list of projects is available at [www.atc-ksa.net](http://www.atc-ksa.net)

### Some of our satisfied clients are:

- |                   |                    |
|-------------------|--------------------|
| Areva Cogalex     | Zai Aljazeera      |
| Areva T&D         | Schneider Electric |
| ABB Automation    | MEEDCO             |
| Al Babtain        | Siemens            |
| Al Toukhi Company | Al Mashariq        |
| BEMCO             | Larsen & Toubro    |
| VA TECH Schneider | Hitachi            |
| Al Khathlan       | Mitsubishi         |
| NCC               | Power Trading      |
| SSEM              | Danway Qatar       |
| ISCOSA            | Saudi Oger         |
| CEPCO             | Saudi French Co.   |
| JAHO              |                    |



Final trip test in progress at Jazan Economic City



Planning and project management is high on our agenda



Monitoring activities using specially designed equipment in progress at Qurayyah substation



Testing and commissioning in progress at Rabigh power station



We are recipients of numerous appreciation letters from our clients



## ABOUT alfanar

### Activities

Headquartered in Riyadh, Saudi Arabia, **alfanar** operates construction and manufacturing businesses, design and development centers and a host of facilities in the Middle East and other countries.

**alfanar** is involved in:

- Electrical, Electromechanical and Civil Engineering Construction.
- Manufacturing and Marketing Electrical Construction Products.
- Allied Engineering Services.

### alfanar construction

**alfanar construction** is one of the few 'Class 1' EPC companies in the region offering turnkey solutions. With a portfolio of successful execution of high profile and large scale projects in the region, the wider service offerings in EPC and engineering services include:



**alfanar power and water:** Specializes in power generation and water treatment projects.



**alfanar transmission and distribution:** Focuses on power transmission and distribution projects.



**alfanarmep:** Provides electro-mechanical works for large projects.



**alfanar bENA:** Specializes in the construction of civil engineering projects.



**alfanar technical services:** Provides electrical equipment overhauling services and manufactures conductors.



**alfanar steel:** Manufactures steel structures for power and communication projects.



**alfanar testing & commissioning:** Provides testing services for power systems of various voltage levels.

### alfanar electric

**alfanar electric** is the industrial arm of **alfanar**, manufacturing a variety of low, medium and high voltage electrical construction products.

Its product range includes:



Power Distribution and Control



Wiring Accessories



Cables and Wires



Transformers



Lighting

**alfanar electric** operates industries in:

- Riyadh and Jubail, Saudi Arabia
- Dubai, UAE
- London, UK

It has a development and engineering center in Chennai, India.