



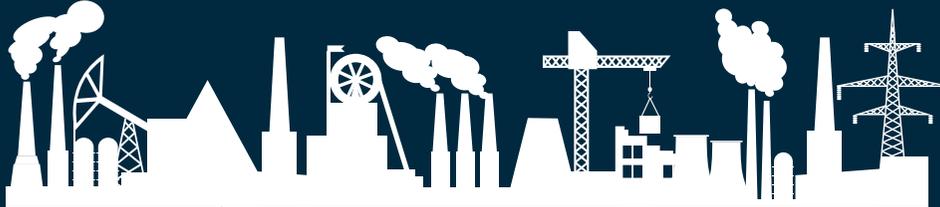
النفار
alfanar
Engineering Services



Your trusted solutions partner for
**FIELD SERVICES, OPERATIONS
& MAINTENANCE**

ENGINEERING SERVICES

OUR IMPRESSIVE FOOTPRINT
IN THE MIDDLE EAST AND BEYOND



LARGEST RE-ENGINEERING SERVICES FACILITY



Transformers
200 MVA



Motors
27000 HP



Generators
1200 MW

IN-HOUSE MANUFACTURING



Preformed
Coils



Magnet
Wires

FACILITY HAVING REGION'S BIGGEST



VPD
Oven



Impulse
Generator



VPI
Oven

TESTING & COMMISSIONING SERVICES



300+
Projects



700+
Strong Team



\$28 mn
Equipment Investment

O&M AND CALIBRATION SERVICES



24/7 Operation &
Maintenance for all
voltage levels



Preventive, Corrective,
Predictive Maintenance



Specialised Calibration Labs
& Repair Workshop

STEEL STRUCTURE FABRICATION



Multi Industry
Solutions



40000
MT/Year



PEB & Structural



Inspired by the desire to provide innovative and technologically advanced products and services, alfanar embraces the **power of excellence** to fulfill both local and international growing needs for EPC Contracting, Manufacturing and Trading of electrical construction products, as well as offering Design & Engineering Consultancy, Building Products, Real Estate Development, Information Technology and Communication and Engineering Services, in addition to developing and constructing renewable and conventional power.

To align the massive growth of the major turnkey related functions, several key vertical units were established and consolidated under the newly established alfanar Engineering Services. The various engineering services provide integrated project solutions, while still maintaining the competitiveness and high standards of alfanar in the quality and delivery of projects. Comprehensive operation & maintenance solutions are delivered by a highly skilled team of professionals.

Our portfolio in O&M and field services include:



REPAIRING & REWINDING SERVICES FOR MOTORS, TRANSFORMERS AND GENERATORS



TESTING & COMMISSIONING OF GENERATION AND T&D



COMPREHENSIVE OPERATION & MAINTENANCE SOLUTIONS



CALIBRATION SERVICES (ONSITE & LAB)



ADVANCED TECHNICAL TRAINING WITH SIMULATION AND PRACTICAL CLASSES



STEEL STRUCTURE FABRICATION



REPAIRING & REWINDING SERVICES FOR MOTORS, TRANSFORMERS AND GENERATORS

alfanar Technical Services (ATS), is a prominent provider of high-quality, precision-engineered repair and rewind services for all types of medium and high voltage static and rotating equipment like Transformers, Motors and Generators.

Equipped with the most modern machineries and Testing Facilities that conform to International standards, ATS has a competitive edge in repair services.





Transformer Rewinding, Repairing and Overhauling

- 231V up to 230kV, ratings from 150kVA up to 200MVA (rewind and repairing)
- 231V up to 380kV, up to 227MVA (overhauling service)

Rotating Machine Rewinding, Repairing and Overhauling

- Motors for 380V up to 13.8kV, horse power ratings from 0.5HP up to 27000HP

Generators for 220v up to 24kv with MW Ratings From:

- 2,500KW to 1,200MW for stator
- 4,160KW to 600MW for rotor

Site Services:

Our site services for Motors, Transformers & Generators include, site testing, Installation and commissioning, Life assessment studies and site overhauling.

Conductor (magnet Wire) Manufacturing

Manufacturing of round enamelled, fine, medium, thick wires ranging from 0.2mm to 5.5mm and rectangular wires from 3mm² up to 80mm² according to IEC specifications.

Preformed Coil Manufacturing

ATS is a pioneer since 2001 to manufacture coils for Electric Induction motors using various types of insulation like Mica, Resin poor/rich, Kapton.



VAPOR PHASE DRYING PLANT



VPD is used in drying of cellulosic insulation of the transformer winding which requires that the moisture content be brought to 5 ppm levels before impregnation of the winding with transformer oil, recovery of the oil and discarding the moisture. The fluid basically acts as a heat carrier to the insulation.

REPAIR & RETROFIT



Power transformers are vital to ensure a trouble-free supply of power with no interruptions. Whether your transformer has failed or you are planning timely corrective maintenance our team of experts is available for short-term and long-term repairs.

alfanar Technical Services performs the repair, overhaul, and modernization of your power transformers that are performed in our dedicated repair shop.



MOTOR TEST FACILITY



We have one of the most advanced and sophisticated testing facilities in the Middle East region for Motors. Our highly experienced Engineers and skilled technicians successfully contribute in diagnosing the electrical and mechanical fault in the motors.

Motors are tested at no load as per IEC 60034 standards and vibration values are maintained as per IEC 600816 standards. The test plant is capable to test the motors up to 20MW on no load from 1.1KV to 13.8Kv range of motors.

GENERATOR ASSESSMENT PROCESS



The life of a generator is mainly dependent on the life of its insulation. Therefore the aging process of the generator has to be very closely monitored. Just like the pulse rate, the blood pressure, sugar level etc., of a human are indicative of his health condition, the capacitance, leakage current, dissipation factor, polarization index, surge voltage with standing strength and partial discharge factors are indicative of the insulation condition of an electric rotating machine.



TESTING AND COMMISSIONING SERVICES

alfanar Testing and Commissioning (AT&C) offers professional expertise in Testing, pre-commissioning and commissioning services of electrical power systems, Generation and T&D, of various voltage levels upto 400kV.

With a very strong team of experienced engineers and technicians numbering to 415 and a generous investment of more than USD28million on various testing and commissioning equipment, AT&C caters to various types of power systems, including 400kV EHV substations. With key experience in the testing and commissioning of GIS switchgears, power transformers, protection and control systems, substation auxiliary equipment, fiber optic cable splicing and generation equipment, AT&C is committed to provide benchmark services to its clients.



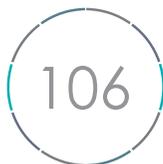
The Services Offered Include:

Power plant, Substation Testing and Commissioning upto 400kV

Generation Equipment Testing

High Voltage Testing

Installation Services, MV&HV Cable Joints and Termination



ONGOING
PROJECTS



COMPLETED
PROJECTS



OVERSEAS
PROJECTS



MANPOWER



EQUIPMENT
INVESTMENT



POWER STATIONS TESTING & COMMISSIONING

AT&C offers high quality and efficient testing, commissioning and troubleshooting services for substations upto 400kV.

HIGH VOLTAGE TESTING UP TO 400kV

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 GIS switchgears up to 132kV, transformers, power cables rated up to 380kV.

GENERATION TESTING

AT&C offers testing and commissioning services for various types of power generation systems like gas, diesel, steam, and combined cycle units.

TRANSFORMER TESTING

AT&C offers testing for transformers, shunt reactors and capacitor banks. We are fully equipped with the latest equipment necessary to provide these specialized services.

TRANSMISSION LINE TESTING

alfanar Testing & Commissioning have the most modern test equipment and machinery to carry out the electrical equipment tests at site for HV and LV transmission lines.

OIL FILTRATION & TREATMENT

AT&C's specific choice and blend of materials and products ensure the best performance of our equipment in the oil treatment and purification field.

HV & MV POWER CABLE JOINTS AND TERMINATION

alfanar Testing & Commissioning are experts when it comes to HV/MV power cable joints and Termination up to 132kV, a highly skilled activity requiring technical expertise and know-how. AT&C team adheres with the manufacturer's procedures and approved processes for the installation of the joints and terminals in different kits.

ELECTRICAL EQUIPMENT INSTALLATION

With our long expertise in the power industry, our team has the capabilities and the necessary equipment to do professional installations on wide range of electrical equipment.

Be it an electrical substation's expansion or replacement of the old system, we provide effective solutions for the installation of the new electrical equipment.



COMPREHENSIVE OPERATION & MAINTENANCE SOLUTIONS

alfanar Operation & Maintenance provides comprehensive maintenance & operation solutions and the most successful operation & maintenance strategies that clients can take advantage of. With more than 20 years of experience in the industry, alfanar Operation & Maintenance provides a wide range of services to suit the electrical infrastructure of modern industry.



We provide O&M Services of the following:

Protection panels with diverse protection schemes, control systems and loose relays

Distance, Differential, DOC, OC, DEF, EF, Synchro check, A/R, AVR, B/B, B/F ..etc.

Medium Voltage Switchgear with different voltage levels (34, 22, 13.8, 3.6 KV)

Auxiliary transformers (TTR, Winding resistance, Oil BD, DGA and Insulation test) Tan Delta

Auxiliary Systems, AC, DC , DC chargers ,ATS and UPS, DC earth fault trouble shooting



Manpower
550



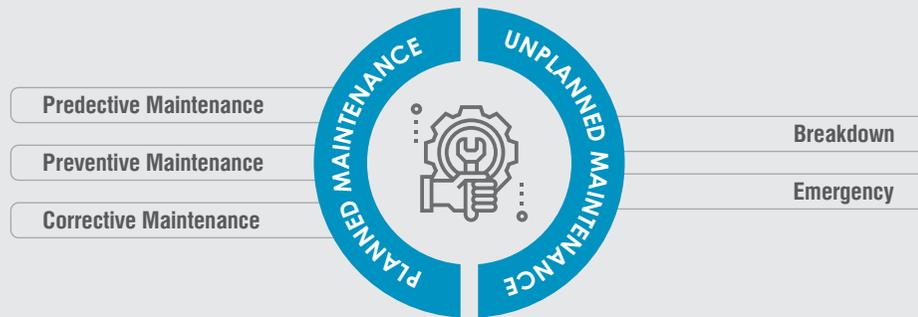
24/7 Operations



PAN Region
Coverage



Operational Excellence



24/7 Operation of High Voltage Systems through certified operators

Maintenance, Upgrading / Retrofitting (Engineering, Supply, Install, Testing and Commissioning) HV, MV & LV Systems

Life Assessment of Electrical Systems

Third Party / Dispute Resolution

Factory Acceptance Tests



WHAT WE DO:

Our experienced team manages the operation and maintenance of electrical infrastructure for generation, transmission and distribution systems. We are qualified to do upgrades, work with network and asset owners to deliver the full suite of services for electrical work programs.

Our experience in the field makes us very poised to provide reliable & trustworthy solutions and recommendations that guarantees an optimum way of Asset Management.

With generous investment in equipment, our experienced engineers & certified technicians can help proactively to avoid outages and unnecessary damage and ensure optimal performance of electrical transmission and distribution system, substations, switch yards, power generators and many more. Further, we are well equipped and can provide quick response and solutions to fix the supply in case of blackouts and emergencies.

SERVICE PORTFOLIO:

- 24/7 operation services for HV & VIP loads including remote areas
- Annual preventive maintenance
- Asset management strategy
- Plant outage/shutdown, turn around management and execution
- Multi discipline maintenance execution
- Assessment and inspection of electrical power supply
- Capability to carry out the work round the clock
- Capable of doing Predictive Measurements, Thermographic Camera, Earth Mesh Measurement, Partial Discharge online monitoring tests



CALIBRATION SERVICES (ONSITE & LAB)

alfanar Calibration Laboratory is a well-equipped electrical, mechanical and electronic equipment calibration, repair and maintenance center to guarantee accurate test results. The lab's calibration services conform to the regulatory and audit requirements of a variety of industries.

Additionally, the lab is fully capable of carrying out component level repairs on electrical instruments and meters. The calibration of equipment is in accordance to the international standard ISO 17025 and in compliance with KSA and International requirements.



Electrical

Calibration Range:

- AC/DC volt up to 1000V
- AC/DC current up to 10 A direct & 1000 A clamped
- Resistance up to 100 G Ω
- Frequency measurement up to 3 GHz
- Capacitance up to 1 mF



Temperature

Calibration Range:

- -100°C Up to 700°C
- Infrared thermometer up to 900°C
- Humidity



Pressure

Calibration Range:

- -1 bar Up to 1400 bar Hydraulic
- Valves calibration up to 14 inches





Torque

Calibration Range:

- Up to 65 Nm generation
- Up to 1500 Nm generation
- Up to 3000 Nm measuring



Mass

Calibration Range:

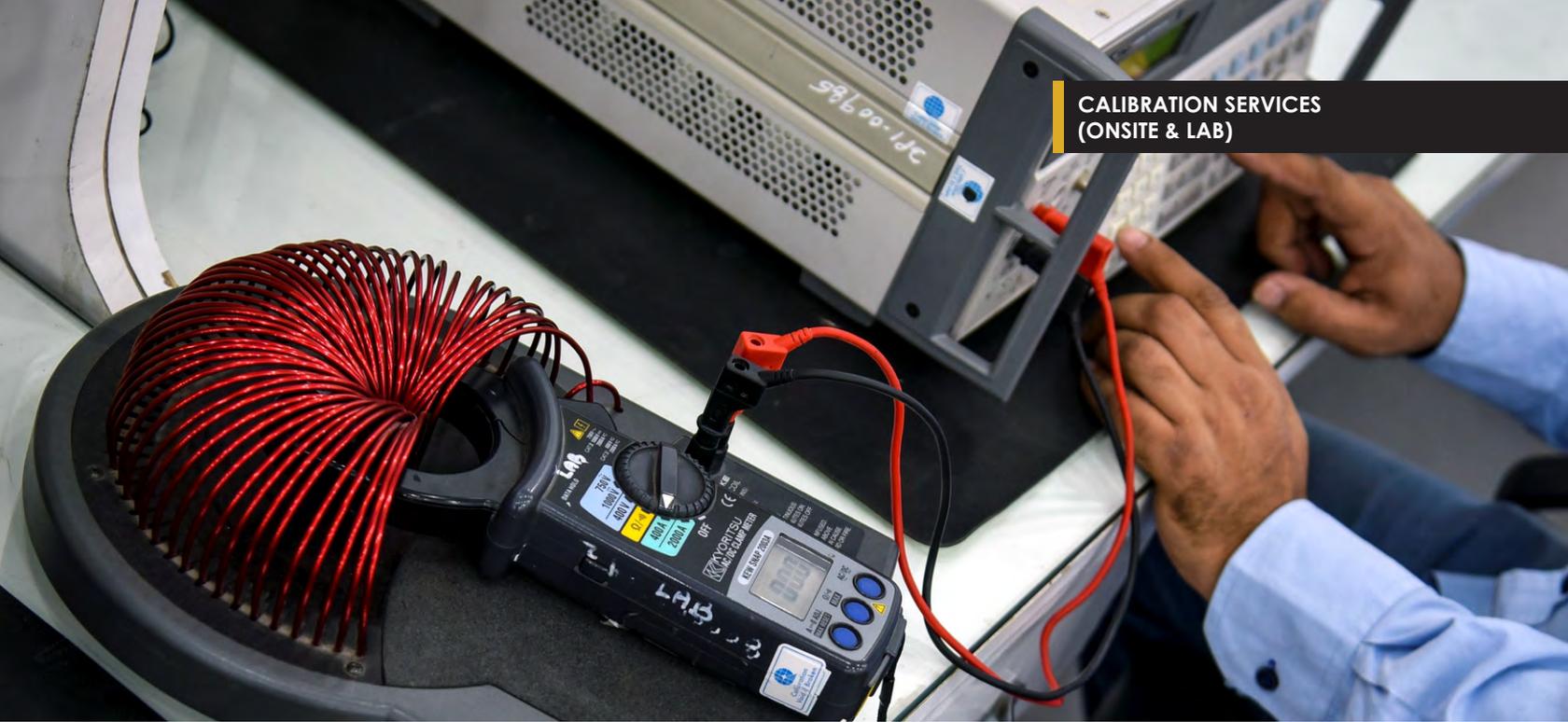
- 1 mg up to 1000 kg.
- Forklifts, Chains and Cranes



Dimension

Calibration Range:

- Up to 1000 mm.



Our Competitive Edge

- Our laboratories are environmentally controlled, ensuring the correct atmosphere for the precise measurements
- Calibrate a wide range of electrical or mechanical instrument and equipment in our centralized facility
- Our Laboratory's ultramodern facility is accredited by International Accreditation Service
- Our services are in full compliance with the ISO IEC 17025 Standards
- Every measuring instrument calibrated/recalibrated by alfanar Calibration Lab receives a certificate listing the calibration result and uncertainties. Further, the records are maintained for at least 5 years enabling us to send you periodical calibration reminders
- Our trained technicians can calibrate instruments ranging from the simplest meter to the most complex multifunction calibrator including hot loop test and I&C packages on site. If defective, it can be sent to the centralized workshop for repair

Industries Serviced

- Utilities
- Moulds factory
- Oil & Gas
- Transformer factory
- Petrochemicals
- Low Voltage & Medium Voltage Switchgear
- Construction industry
- Plastic and Paper Industry
- Food & Beverages
- Steel Factory
- Healthcare-Medical Cities & Hospitals
- Ceramic Industry
- Education
- Precast and cement Industries
- Cable Factories
- Aero & Transportation



STEEL STRUCTURE FABRICATION

alfanar Steel is primarily involved in the designing, engineering, fabrication and installation of steel structures for various kinds of infrastructure related to electrical power transmission & distribution and communication systems, industrial and building sectors.

With capabilities ranging from designing, engineering, detailed fabrication and erection; alfanar Steel undertakes complete project or part of a project and executes them on a zero-error basis.



alfanar Steel provides total steel structure solutions-right from designing and manufacturing to installation for:

Power Generation

Transmission Lines

Substation Structures

Communication & Broadcast Towers

Industrial & Commercial Structures





INDUSTRIAL/COMMERCIAL STRUCTURE

alfanar Steel has developed an outstanding reputation in providing industrial and commercial structures, such as Pre-engineered Buildings Structure and Structural Steel. We are known for our dependable deliveries while maintaining very tight construction and maintenance scheduling while special care is given to offer a very competitive price. We design, engineer and fabricate steel structures for a variety of industries.

COMMUNICATION & BROADCAST TOWERS

alfanar Steel is an approved STC (Saudi Telecom) vendor and have designing and engineering capability, supported by the fabrication unit.

We design, engineering & fabricate the Self Supporting Squared Towers & Non-Penetrating Strut Supported Square Tower (Greenfield, Rooftop, Heavy Medium & Light), using Guy mast & TS Tower latest versions of software.

Four-legged, light and medium duty self-supporting communication towers

- Rooftop, self-supporting non-penetrating cellular communication towers
- Fence system for GSM Tower Sites Earth Masts etc.
- Four leg self-supporting towers (light, medium & heavy)
- Security post and communication towers
- Roof top sheds
- All type of antenna mounting system
- Tower gantry and GSM fence systems
- Guide masts, tower extension and cable guide extension
- Railway electrification and Communication Towers



STEEL STRUCTURE FABRICATION

POWER GENERATION STRUCTURE

alfanar Steel is also involved in the fabrication and supply of Power Plant structures related to Outdoor turbine steel structure, generation room sheds, auxiliary room supporting structure and associated steel accessories.

Few of the Design, Fabrication & Erection Works for power generation structures include:

- Outdoor turbine and Generator room sheds
- Steel Structure for turbine area
- Steel Structure for Generator area,
- Auxiliary room, supporting structure
- Stack Supporting structure
- Turbine air intake duct support structure
- Maintenance walk ways
- Platform, Handrails etc.

TRANSMISSION & DISTRIBUTION STRUCTURES

alfanar Steel is an approved Saudi Electric Company (SEC) vendor for steel structure.

alfanar Steel designs and manufactures hot-dipped galvanized steel lattice structures for substations including switch yard structures, with or without earth switch.

alfanar Steel manufactures steel structures for:

Transmission lines

- 132 KV OHTL
- Dead End Towers

Substation Structures

- Gentries Towers up to 380 KV
- Surge Arrestors Supporting structures
- Post Insulators Supporting Structures
- Bird Screens
- Sunshades for Transformers
- Transformer Steel Gratings
- Substation Indoor & Outdoor supporting structures & catwalks etc.

www.alfanar.com



TECHNICAL
SERVICES



TESTING &
COMMISSIONING



OPERATION &
MAINTENANCE



CALIBRATION
SERVICES



TRAINING
INSTITUTE



STEEL STRUCTURE
FABRICATION



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