

Business Profile

Delivering reliable results with quality

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ALFANAR PORTFOLIO





OVERVIEW OF ALFANAR ENGINEERING SERVICES

Alfanar Engineering Services, the engineering services arm of Alfanar Projects, is inspired by the desire to **Deliver Reliable Results with Quality**. It consolidated key vertical units to align with the growing demand for turnkey-related functions.

Our highly skilled professionals deliver integrated project solutions, maintaining our high-quality and timely project delivery standards.



Testing, Pre-commissioning
& Commissioning



Operation & Maintenance



Repair & Rewind Services



Magnet Wire Manufacturing



Calibration & Repairs



Technical Training

CAPABILITIES & EXPERTISE

TESTING, PRE-COMMISSIONING & COMMISSIONING



+1000
Projects



+1200
Qualified Team



+120M
Test equipment



Up to
400kV



High Voltage
Test



**Reinforcement/
Retrofitting** Projects

LARGEST TECHNICAL SERVICES FACILITY



Transformers
***960 / 380 kV**
200 MVA / 230kV



Motors
30000 HP



Generators
***850 MVA**

OPERATION AND MAINTENANCE



24/7 Operation & Maintenance
for all voltage levels



Predictive, Preventive, and
Corrective maintenance

*Site Services

OUR FACILITY HAS THE REGION'S BIGGEST



VPD Oven



Impulse Generator



VPI Plant

TECHNICAL TRAINING



+250,000
Training Hours



+3,500
Trainees



Simulation
& **On-site**

IN-HOUSE MANUFACTURING



Preformed Coils

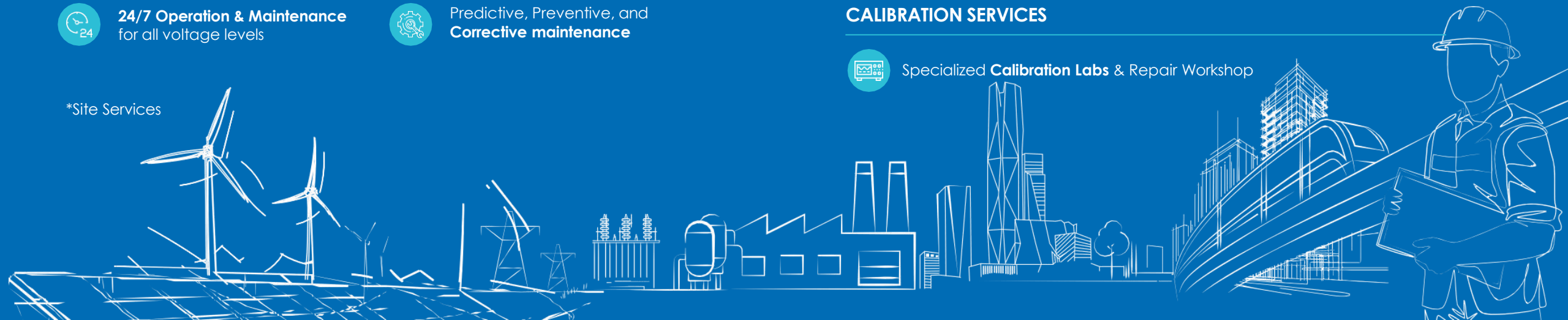


Magnet Wires

CALIBRATION SERVICES



Specialized **Calibration Labs** & Repair Workshop



A photograph of two male electrical engineers in a substation. They are wearing hard hats (one white, one orange) and high-visibility safety vests (one green, one orange). They are looking at a large set of blueprints or technical drawings held by one of them. In the background, there are rows of large, grey electrical switchgear cabinets with various control panels and indicator lights. The scene is dimly lit, with some blue light from the equipment.

Testing, Pre-commissioning & Commissioning

Our Testing, Pre-commissioning & Commissioning offer comprehensive solutions for electrical power systems up to EHV (400kV). We use advanced technologies to ensure the highest levels of quality and safety.

Service Portfolio



Power plants, Substation (Transformer, GIS & Switchgear), systems testing, pre-commissioning, and commissioning services.



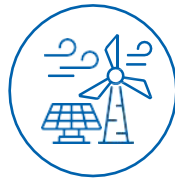
Medium, high, and extra high-voltage testing up to **400kV**, for cables and GIS testing up to 132kV.



Oil filling, filtration, BDV, and DGA analysis for optimal equipment performance.



Medium, high, and extra high-voltage cable testing, DC system testing, battery and battery charger testing, and overhead transmission line testing.



Testing & Commissioning of renewable (wind, solar) new energy, BESS, and green hydrogen projects.



Electrical equipment installation services, ranging from substation expansions and retrofitting upgrades to new system installations.

High Voltage Testing up to 260kV

Alfanar Engineering Services operates with a fleet of three high voltage testing machines to perform precise withstand and diagnostic testing up to 260kV.

This ensures uninterrupted service availability for critical testing of power cables and GIS systems. Additionally, it enables handling complex grid expansion and maintenance projects across Saudi Arabia and GCC.



Key Projects Overview



Kidana Group – 2025

We provided testing & commissioning services for five 110/13.8 kV substations and 380/110 kV BSP with Kidana Group.



Sindalah Island, NEOM – 2024

We delivered testing, commissioning, and O&M services for Sindalah Island, ensuring uninterrupted power throughout the project's critical phases, including the grand opening.



Bisha Battery Energy Storage System (BESS) – 500MW/2000MWh – 2024

We successfully tested and commissioned the Kingdom's first BESS project, enhancing grid stability and supporting the integration of renewable energy sources.



Diriyah – 2024

We delivered high-quality services for high-voltage systems at the Diriyah Gate 380kV substation project. This critical infrastructure forms a key part of the power backbone supporting the Diriyah Gate Development Authority.



NEOM Green Hydrogen Project – 2024 & Ongoing

We contributed to the world's largest green hydrogen facility by performing testing and commissioning of substations that met international safety and performance standards.



1,500MW Sudair Solar Project - 2022

We commissioned pooling substations for the Sudair Solar Project, enabling the reliable transmission of clean energy to the grid in support of Saudi Arabia's Vision 2030 goals.



King Salman Park - 2024

We provided commissioning services for King Salman Park's electrical infrastructure, achieving multi-phase performance with zero critical failures.



Operation & Maintenance

With more than 25 years of experience, our Operation & Maintenance team provides 24/7 specialized services tailored to the electrical infrastructure of the modern industry.



Manpower

+550 highly skilled professionals



24/7 Operation & Maintenance for All Voltage Levels

We provide O&M services for protection panels, control systems, switchgear, auxiliary transformers, and more.

Comprehensive Maintenance Solutions



Predictive, preventive, and corrective maintenance for electrical equipment.



Assessment and inspection of electrical systems, including testing with thermographic cameras, earth mesh measurement, and partial discharge online monitoring.



Plant outage, shutdown, and turnaround management.



Quick emergency response services, even in remote areas.

Key Projects Overview



Gas-Insulated Transformers in Makkah - 2024

We executed Saudi Arabia's first Gas-Insulated Transformer (GIT) installation, navigating complex logistics and strict regulations in one of Makkah's most sensitive zones.



Petro Rabigh Turnaround – 2025

We provided inspection, maintenance, and testing services, as well as substation equipment at Petro Rabigh. This ensured a safe and seamless operation of all the plant's components.



SATORP Turnaround Project - 2023

We supported time-sensitive electrical maintenance for the SATORP turnaround, helping ensure safe operations and successful completion of all key milestones.



Sindalah Island - 2024

O&M for LV, MV, and HV electrical systems including submarine cables (longest submarine cable in the world pulled in HDPE underground duct under Sea bid), RMUs, 50 package substations, and all downstream LV System feeding the loads.



Makkah Clock Tower, O&M - 2018 and Ongoing

We ensured uninterrupted power at the Makkah Clock Tower by deploying a qualified O&M team during peak pilgrimage periods to maintain critical infrastructure performance.



Technical Services

Our Repair and Rewind facility in Jubail is one of the largest in region. Equipped with the most advanced machinery, the facility offers best-in-class repair and rewind services for transformers, motors, and generators.

FACTORY SERVICES

- Rewinding up to 200 MVA 230kV.
- All types of transformer repairs.
- Overhauling.
- VPD oven.
- Routine diagnostic testing.
- RCA for failure analysis.

SUPPLY

- A complete replacement transformer
- Replacement of all types of OLTC & bushing.
- All types and brands of oil.
- Study, supply, replacement/ upgradation to a new cooling system.
- DGA and transformer monitoring systems.
- Transformers, bus ducts, and cable boxes.
- Online transformer-drying unit.



SITE SERVICES

- Assembly testing & commissioning services of new/old transformers.
- Site overhauling and drying.
- All types of leakage attending.
- Shutdown / annual project management activities.
- OLTC selector and diverter inspection, repair, and PM.
- Oil filtration, regeneration and passivation.

EXPERT SERVICES

- Transformer condition and life assessment studies.
- Root cause failure analysis.
- Oil sampling and DGA analysis.
- Partial discharge testing & analysis.
- DFRA & SFRA testing and consultation services as a third party.

TECHNICAL SERVICES - REPAIR & REWIND FOR MOTORS

FACTORY SERVICES

- Complete overhauling & rewinding of LV and HV AC and DC motors.
- Troubleshooting of motors.
- Refurbishment of the shaft for the rotors.
- Performing no-load test up to 30000HP 13.8KV motor of any type.
- Manufacturing preformed coils & supply up to 30000HP, 13.8KV.

SUPPLY

- Electric motors, including site survey and reverse engineering.
- High voltage preformed coils.
- Rewinding kit.
- Online partial discharge monitoring devices.
- Motor spare parts of various OEMs.
- Motor special components.



SITE SERVICES

- Dismantling and overhauling on site for complete motor.
- On-site dry ice cleaning.
- Rigging activities removal for crane access.
- Alignment of the motor with respective loads.
- Turnaround maintenance shutdown project for electrical rotating machines.

EXPERT SERVICES

- Online partial discharge measurement, analysis, & correction.
- RCA / failure analysis of the motor.
- Solving high-vibration problems for any type of motor.
- Providing welding solutions for special maintenance & repair jobs.
- Redesigning high-voltage coils to be based on RCA analysis to avoid future failure.
- Life assessment of electrical rotating machines.

TECHNICAL SERVICES - REPAIR & REWIND FOR GENERATORS

FACTORY SERVICES

- Rotor refurbishment
- Rotor rewinding
- Exciter rewinding
- Rotor test and inspection.
- Bearing and seal repair.

SUPPLY

- Spare parts for the generator.
- Rotor winding kit.
- Partial discharge monitoring system.
- Bearings and seals.
- Stator bars.



SITE SERVICES

- Major inspection of the generator.
- Minor inspection of the generator.
- Stator rewinding.
- Stator refurbishment.
- Rotor refurbishment.
- Test (RSO, Pd, and Tan delta Test) and inspection.
- Generator life assessment.
- On-site dry ice cleaning.

EXPERT SERVICES

- Failure investigation.
- Condition assessment.
- Diagnostic test.

Key Projects Overview (Motors & Generators)



19500 HP Synchronous Motor Repair – 2024

We completed the urgent repair and rewinding of a 19500 HP synchronous motor at an Aramco joint venture plant, restoring full functionality by addressing inter-turn shorts and insulation failure. As an approved service provider for hazardous area motors, we delivered the solution under tight timelines.



25000 HP Synchronous Motor Overhauling & Rewinding – 2023

We overhauled and fully rewound 25000 HP synchronous motor, with new coils manufactured in-house to match original specifications. The motor was restored for long-term, reliable operations, reflecting our high-capacity repair capability.

198,000 kVA Generator Rotor Rewinding - 2024

We successfully rewound the rotor using new insulation and its original copper to preserve design integrity, while maintaining high performance, reliability and enhanced lifespan.

This sustainable solution met all technical and project specifications efficiently.



Onsite Stator Re-Wedging for Steam-Turbine Generator 510,000 kVA – 2021

We performed stator on-site re-wedging to maintain continuous power at a high-demand facility, ensuring reliable operations during critical periods.

Our expert team met key performance indicators while supporting uninterrupted service.

Key Projects Overview (Transformers)



960 MVA Transformer Replacement

We replaced a 960 MVA transformer by dismantling the faulty unit and transporting a new one from Shuqaiq to Jeddah by road and sea. Our team completed installation, testing, and energization under a 24/7 schedule.



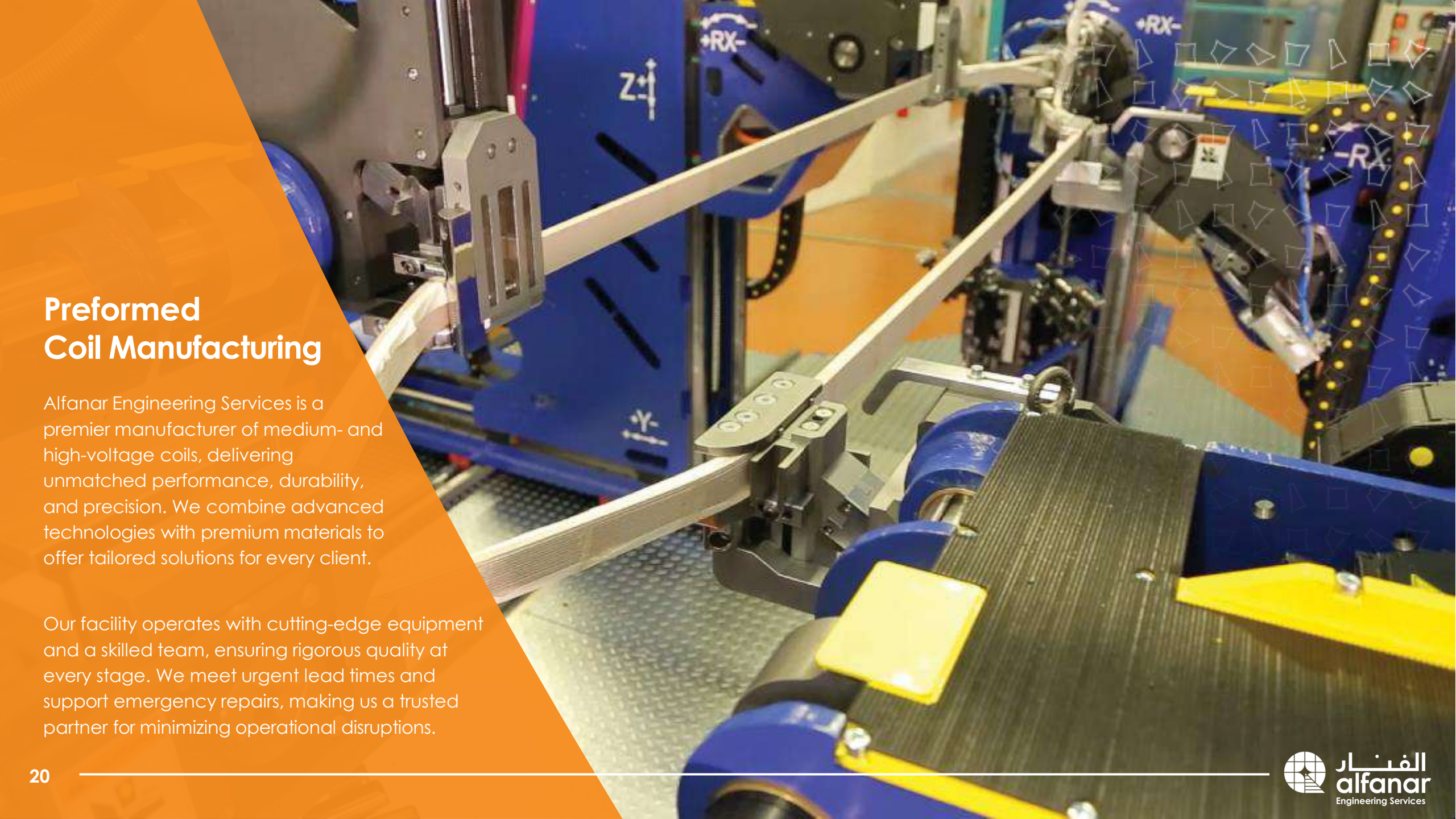
752 MVA Transformer Replacement

We handled the replacement of a 752 MVA transformer, managing complex logistics and route constraints. The work included cable testing, GIB installation, system protection, and final safe energization.



100 MVA Transformer – Full Rewinding

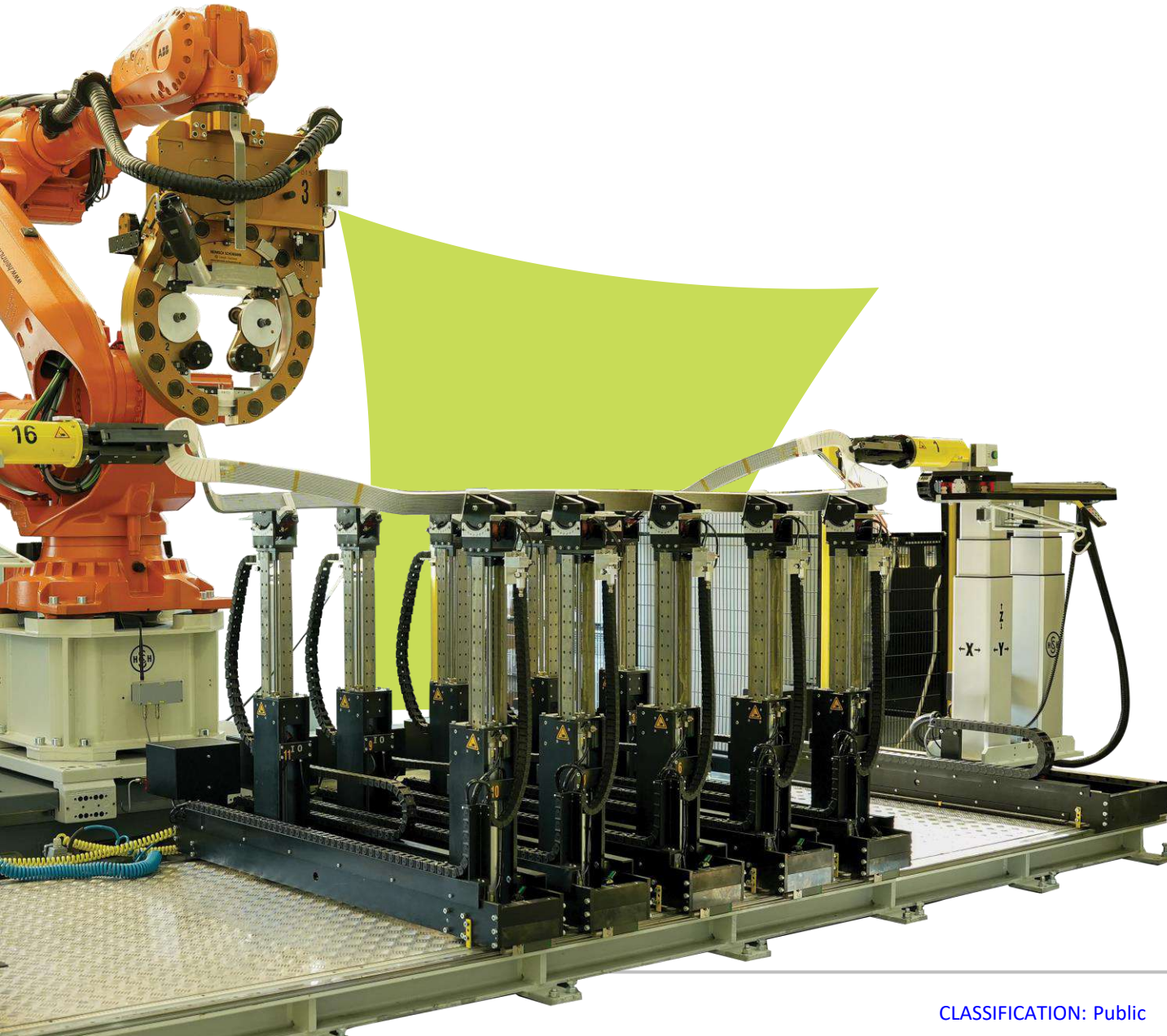
We rewound a 100 MVA transformer with HV and LV windings manufactured internally and cured using our VPD system. After assembly and successful FAT, the unit was transported and installed for operational readiness.

A detailed view of industrial machinery used for manufacturing coils. The machine features blue structural frames, yellow safety components, and various mechanical arms and rollers. A long, thin metal strip is being processed. Labels like '+RX-', '-RX-', and 'Z+' are visible on the machine's frame. The background shows a grid of diamond shapes.

Preformed Coil Manufacturing

Alfanar Engineering Services is a premier manufacturer of medium- and high-voltage coils, delivering unmatched performance, durability, and precision. We combine advanced technologies with premium materials to offer tailored solutions for every client.

Our facility operates with cutting-edge equipment and a skilled team, ensuring rigorous quality at every stage. We meet urgent lead times and support emergency repairs, making us a trusted partner for minimizing operational disruptions.

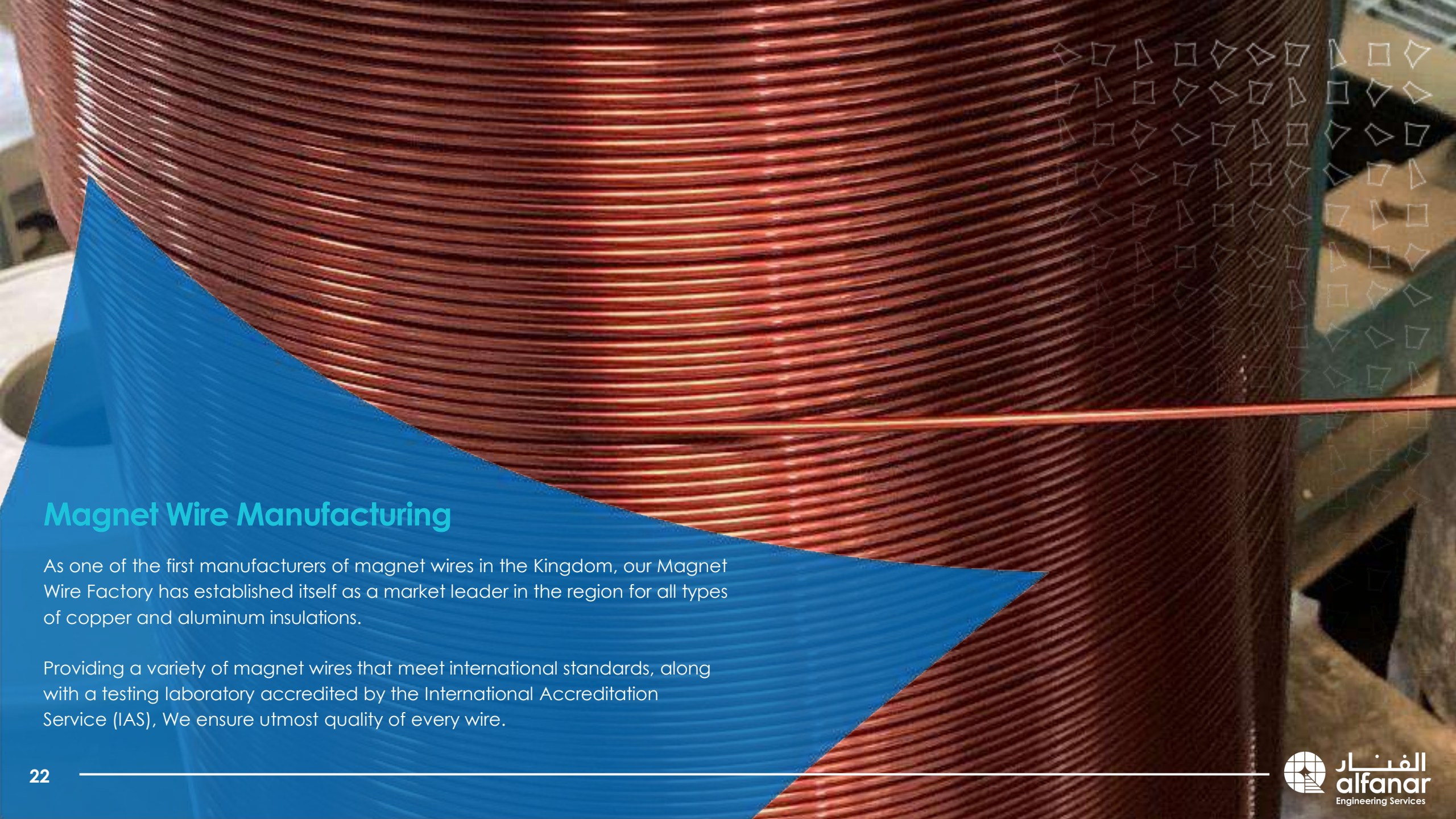


Advanced Coil Forming Machines

Our advanced forming machines reduce insulation wear on copper conductors, lowering the risk of inter-turn short circuits and boosting coil durability. All coils consistently meet IEEE 522 standards for long-term reliability.

Precision Robotic Taping Machines

Our robotic taping systems apply multi-layer insulation with high accuracy, fully aligned with coil design and manufacturer specifications. These machine-taped coils surpass IEEE 286 test standards, ensuring superior quality and extended service life.



Magnet Wire Manufacturing

As one of the first manufacturers of magnet wires in the Kingdom, our Magnet Wire Factory has established itself as a market leader in the region for all types of copper and aluminum insulations.

Providing a variety of magnet wires that meet international standards, along with a testing laboratory accredited by the International Accreditation Service (IAS), We ensure utmost quality of every wire.

Our Products

Our modern plant is capable of meeting OEM's demand for superior magnet wires.



Wide range of in-house manufactured magnet wires (Copper/Aluminum).



Round wires with different types of insulation (Enamel, Paper, Fiber Glass, Nomex,).



Different types of thermal classes (F 155°C, H 180°C, C 200°C, C 220°).



Rectangular wires with different types of insulation (Enamel, Paper, Fiber Glass, Nomex, Mica).



Corona-resistant magnet wires (Inverter Wires) under trade name "ALFANOMAX".



Solid wires.



Accreditation

ISO
9001:2015

ISO
45001:2018

ISO
17025:2017

SIRI
Certificate

Testing Laboratory
Accreditation No.
TL-1282

Calibration and Repair Services

Our Calibration Labs are in Riyadh and Jeddah. They offer advanced, accredited services for electrical, mechanical, and electronic equipment, adhering to ISO 17025 standards. Our labs provide precise calibration for a wide range of equipment, ensuring compliance with regulatory requirements across industries.

CALIBRATION & REPAIR SERVICES



Electrical

Calibration Range:

- AC/DC volt up to 150KV
- AC/DC current up to 2000A
- Resistance up to a T ohm
- Frequency measurement up to 3Ghz
- Capacitance up to 1 mF



Temperature

Calibration Range:

- -100 °C up to 700°C
- Infrared thermometer up to 1000 °C
- Humidity



Pressure

Pressure

- 1-1400 bar Hydraulic
- Valves calibration up to 16 inches



Torque

Calibration Range:

- Up to 1500 Nm – Generation
- Up to 3000 Nm – Measuring



Mass

Calibration Range:

- 1 mg up to 20,000 kg
- Forklifts, chains, and cranes



Dimension

Calibration Range:

Up to 1,000 mm

Competitive Advantage



Our advanced laboratory environment ensures accuracy and precision.

All instruments receive certified calibration, and records are maintained for at least 5 years.

Authorized repair services for a wide variety of manufacturers including Megger, SMC, and Chauvin Arnoux, ensuring fast turnaround times.

Advanced on-site and in-house repair services for instruments, UPS, and control panels.



Technical Training

The Technical Training Institute offers a comprehensive suite of technical courses, customized to meet the needs of power industry professionals. With **over 250,000 training hours delivered and 3,500 trainees served**, we stand out as a leader in power system training.

Training Focus Areas

- Low, Medium, High, and Extra High Voltage Switchgear.
- Protection and Control Relays for Power Systems.
- Power, Auxiliary Transformers, and Ring Main Unit (RMU).
- AC/DC Auxiliary Systems.
- Renewable Energy.
- Safety Programs.



KACARE Accredited Solar PV System Design

Training Methodology

- Our courses combine theoretical learning with practical, hands-on simulations, using the latest and most advanced test kits.
- Trainers are certified by international OEMs, ensuring high-quality training delivery.
- Both fixed and customized courses are available to meet industry-specific needs.

Engineering Services' Accreditations & Certificates



Accreditations



Certificates



Energization of 500 MW/2,000 MWh Battery Energy Storage System (BESS)



Energization of HV Substation



National Grid Various Projects



Substation Testing, Commissioning & Energization Jazan Refinery



Power Block 5 Project



MV Switchgears

Certificates



Corrective Maintenance for Generator



Substation Restoration



GAS Insulated Transformer Installation



Turnaround Project



Turnaround Project



Substation Preventive & Corrective Maintenance

Certificates



CERTIFICATE OF APPRECIATION

Is awarded to

Al- Fanar Engineering Service (Ats)

Appreciation of your untiring effort, safety mindful and excellence commitment in making the valuable contribution and remarkable.

MAJOR MAINTENANCE FOR 2024 SHUTDOWN


Adel Al Rajeh
[Maintenance Support Service Manager]

 X: sasref_aud@ | In: sasref | @: sasref.com.sa

Major Maintenance Shutdown Project

certificate of appreciation

This is to Appreciate

Mr.Amer Alajmi - EVP Sales & Marketing

For completion B110-20352 Transformers Replacement Project by Alfanoor Technical Services at JNGL Substation 1 safely and successfully


Abdallah S. Guraishi
General Manager, Project & Technical Support Department



Transformer Replacement Project

Saeed H. Binwaleg
President & CEO
YASREF

Norah Binwaleg, President (Yasref)
P.O. Box 20223, Yanbu Industrial City, 41812 KSA
Tel: +966 11 288 1189

May 14, 2024

YASREF-I-025/2024

YASREF APPRECIATION LETTER

Amer Al-Ajmi
EVP – Sales and Marketing Alfanoor Construction
Jubail Industrial City 31561, PO Box 35388
First Support Industrial Area Intersection Between
Street # 130 & 175

I would like to extend my deepest appreciation to Alfanoor Company for the outstanding support and efforts in completing the repair activity of ATIS-REF-MT-03041-YASREF118-KM-0001A Motor. Your team's dedication and assistance have been instrumental in restoring our production capacity and minimizing losses for our company.

The unwavering commitment and proactive approach demonstrated by Alfanoor were truly commendable. From the initial preparation of the rotor for hardware replacement to overcoming challenges with materials and chemicals, your team exhibited professionalism and resourcefulness throughout the process.

Your recommendation to utilize available inter turn insulation chemical, despite being rejected by the original manufacturer, General Electric (GE), showcases your proactive problem-solving skills. The collaborative efforts to find alternative solutions, such as conducting experiments with shellac chemical, further underscored your team's commitment to ensuring the successful completion of the repair within a remarkably short timeframe of 14 days.

Furthermore, the resourcefulness displayed by Alfanoor in leveraging materials from Aramco to supplement the insufficient supplies exemplifies your dedication to maintaining progress and efficiency in the face of challenges. Your ability to adapt and collaborate with external partners, coupled with GE's assurance of delivering the necessary replacements promptly, reflects a high level of professionalism and teamwork.

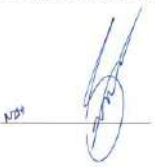
On behalf of Yasref, I extend our deepest appreciation for the outstanding support and partnership demonstrated by Alfanoor Company. Your contributions have been instrumental in our swift recovery and successful completion of this critical repair activity. We look forward to continued collaboration and mutual success in the future.

Thank you once again for your invaluable support.

Warm regards,

Cc: Yasref VP Manufacturing

Classification: **YASREF Internal**



Motor Repair Completion

بالقوة يمكننا كل شيء
With our strength, we can do anything

Saeed A. Al-Qahtani, TA Director
Maintenance Department
Phone: +966 11 288 2024

Wednesday, January 15, 2025

TURNAROUND COMPLETION CEREMONY

YASREF-TA&PLNG-0001-2025

TA2024 Success Partner,

With the successful completion of Yasref 2024 Mega Turnaround, we would like to extend our sincere appreciation to you and your company's outstanding contribution to this success. Your team's expertise, dedication, and unwavering commitment to safety and quality were pivotal in achieving the successful completion of this critical milestone.

The 2024 Mega Turnaround was a monumental undertaking in every aspect, one that Yasref proudly referred to as a "GLORY", successfully accomplished through the collective efforts of Yasref team and its partners; your contribution to this success was truly commendable.

To celebrate this significant achievement, we are delighted to invite you to the Turnaround Completion Ceremony on February 2nd, 2025, 5:00 PM to 10:00 PM, in Yanbu City (Venue and Agenda will be shared closer to the event date). This special occasion will provide an opportunity to recognize and honor the hard work and dedication of all members involved.

Thank you for your exceptional partnership and for your unwavering commitment to delivering excellence.


Saeed A. Al-Qahtani
TA Director

Cc: President & CEO
VP Manufacturing
Supply Chain Manager
Corporate Affairs & Support Services Manager
File Letter Book

Classification: **YASREF Internal**

Yasref Project Support Refining Company (YASREF) Ltd
Kingdom of Saudi Arabia
P.O. Box 82228, Yanbu Industrial City 4282
Telephone: +966 4 398 1559
Facsimile: +966 4 398 1538
www.yasref.com

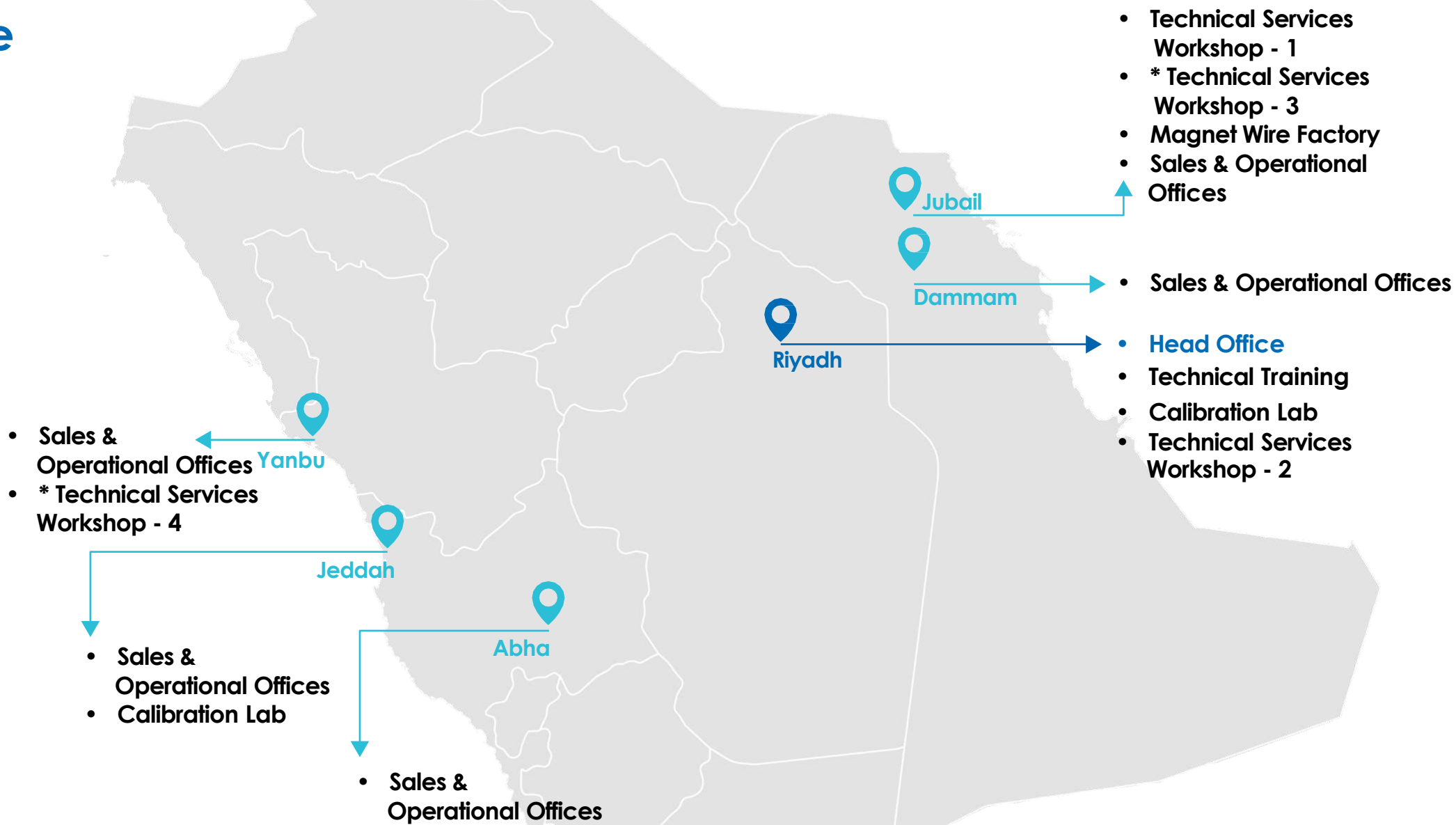
شركة دعم مشاريع التكرير (ياسرف) المحدودة
المملكة العربية السعودية
ص.ب. 82228، مدينة ينبع الصناعية 4282
الهاتف: +966 4 398 1559
الفاكس: +966 4 398 1538
www.yasref.com

Yasref 2024 Mega Turnaround



Our Presence & Key Clients

Our Presence



*COMING SOON

Our Presence with Key Clients



*COMING SOON

Contact Us

**Alfanar Engineering Services,
Kingdom of Saudi Arabia**

Tel: +966 920006111

Email: atc.sales@alfanar.com | atsjubail@alfanar.com

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