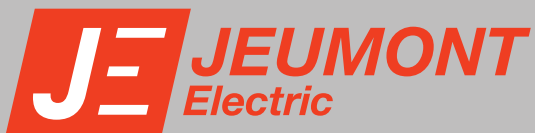


Equipment & Services

Altawest Group 



Technical skills

Combining fast reaction and strong technical know-how

Our teams take care of your concerns

- Professionals – engineers and site operating staff- propose original and innovative technical solutions and guarantee holding the schedule and high quality standards.
- For each contract, a project team is set up with engineers, experts and specialized technicians. The project manager coordinates the actions and makes sure that customer request are taken into account.
- Our teams can be mobilized upon very short notice. This reactivity is the result of a group spirit and optimal logistics.

Technical skills

- Thanks to JEUMONT Electric design and manufacturing capabilities, the service teams can call upon specialists in vibration, electrical and thermal design engineers, and also the support of laboratory teams.
- A very large feedback has been capitalized along the century of developments, production and services performed by JEUMONT Electric in the field of large size equipments like turbo generators, hydro generators, but also on medium size equipments such as generators for industrial applications, diesel engine driven generators or induction motors.
- This valuable experience has enabled our teams to offer services on equipments produced by other manufacturers, increasing thereby the company's know-how.
- JEUMONT Electric is therefore capable of implementing cost effective and reliable solutions
- The services comprise, possibly on turkey basis:

Assessments, maintenance, design improvements, refurbishment, winding corrections or rewinding, tests, erection and commissioning.

500 MW Water cooled stator rewinding



500 MW stator Core restacking



Test after rewinding 95 MVA rotor



Our commitment

increase the availability of your equipments

JEUMONT Electric Service Teams provide maintenance, repair, refurbishment and optimization of your high power generators and motors.

JEUMONT Electric, manufacturer of large electrical rotating machines for nuclear power plants, industry, thermal power plants, renewable energy plants, naval forces and merchant marines also offers a wide range of services to optimize the operation of your electric motors and generators.

150 MW stator rewinding in factory



Overhaul 80 MVA generator



Large generators (above 100 MW) cooled by air, water/hydrogen or hydrogen

- 1500 rpm generators for nuclear power plants 900, 1300 and 145 MWe.
- 3000 rpm generators for thermal power plants rated up to 700 MWe.

Generators and motors rated from 1 to 100 MW and associated auxiliaries

- Generators for gas and steam turbines.
- Fixed or variable speed motors.
- Hydro generators.
- Generators for Diesel plants.

Machines made by JEUMONT Electric

We guarantee a complete range of OE M services including installation, commissioning, spare parts, conditional, preventive and corrective maintenance, refurbishment, ...

Machines of any other OEM or technology

With 20 years of experience in refurbishing generators or motors from various OEM's, JEUMONT Electric is capable to perform services as indicated here above on such units.

Furthermore by using reverse engineering, JEUMONT Electric can propose improvement of the equipments or manufacturing main components like stators, rotors...

Refurbishment of excitation system

Due to quick evolution of electronic components and obsolescence of the original components, it is often necessary to rejuvenate the systems.

JEUMONT Electric can undertake such a project, irrespective of the OEM as well



Our services

Meeting your needs

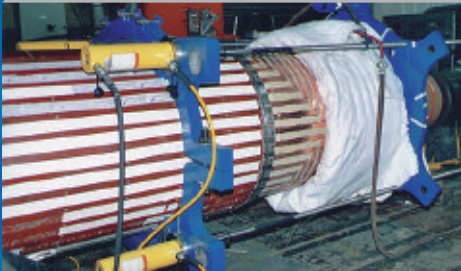
670 MVA Jeumont stator refurbishment



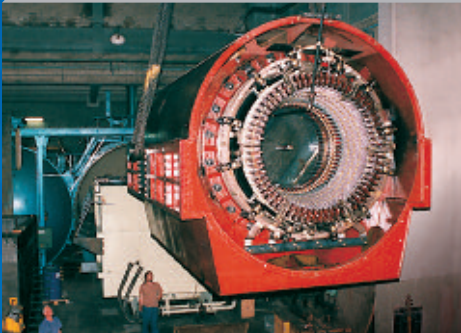
180 MVA generator overhaul



Removal of Jeumont 250 MW rotor end bells



70 MVA stator after rewinding



Technical assistance

- JEUMONT Electric engineers and technicians handle commissioning of your rotating electrical machines and guarantee start-up of your facility under optimum conditions.
- Our teams are available throughout the operating life of the machine, and stand ready to answer your questions concerning spare parts, upkeep, overhauls, and optimizing the operation of your motors, generators and their auxiliaries.
- Training sessions, in digital or analogical excitation-control as well as in oil sealing and hydrogen auxiliary units can be carried out on demand.

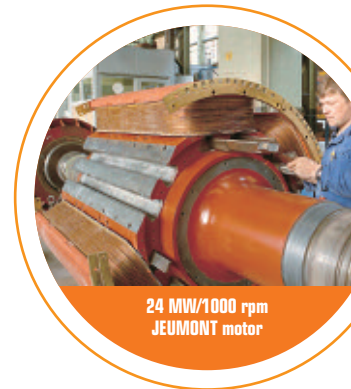
Preventive and conditional maintenance

JEUMONT Electric offers a package of preventive maintenance services that includes checking of the main machine functions:

- Checking and correcting the adjustment parameters,
- Dielectric tests,
- Temperature measurement,
- Verification of flow rates and pressures,
- Vibratory measurements and signatures (balancing , bump test) and corrections,
- Boroscopic inspections,
- Measurement of shaft potential,
- Readings and checks of functional clearances.
- Etc ...

Our commitment

Ensure assistance and regular follow-up, to minimize outage time, and reduce the risk of forced outages.





Spare stator for a reactor coolant pump in USA

Corrective maintenance solutions

A fast and efficient assessment and an analysis of problems met, an analysis which is based on our operating feedback, will make it possible to provide appropriate solutions.

- **Main corrective maintenance actions**

- Stator rewinding with Roebel bars or coils using VPI,
- Rotor rewinding in kind or with improved design in terms of cooling, end turn blocking,...
- Repair of water clips on water-cooled generator stators; using an induction brazing process (SURJIBOX),
- Repair of core damages

- **Spare parts**

A dedicated team deals with the requests and commits itself to deliver qualified spare parts in the shortest delivery times: windings, bearing sleeves, electronic cards...

- **Renovation and optimization of rotating electrical machines**

An operating feedback database and design code software enable our teams to modify machine designs or increase the power rating.

- **Refurbishment of AVR and protection cubicles**

JEUMONT Electric proposes the rejuvenation of such systems where components obsolete quicker than the machine and where no spares become available.

JEUMONT Electric can take up such projects irrespective of the OEM, and whatever the power rating of the machine.

1200 MW short circuit generator rotor rewind



295 MVA JEUMONT generator (hydrogen-cooled)



Refurbishment of 50 MVA hydro plant Italy

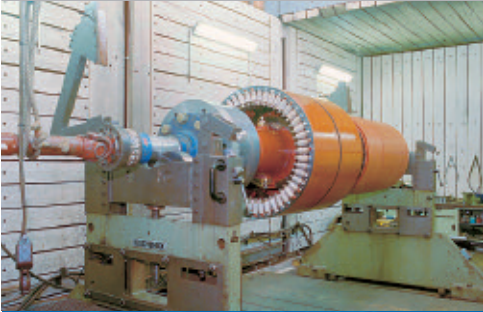


Replacement of stator coils on 1300 MW generator





Rotor refurbishment of short circuit generator



Rewinding in factory of 900 MW rotor



Rewinding 295 MVA Jeumont rotor



Overhaul of 80 MVA aircooled generator



Overhaul of Jeumont 125 MW generator



Test of AVR refurbished cubicle 900 MW nuclear plant



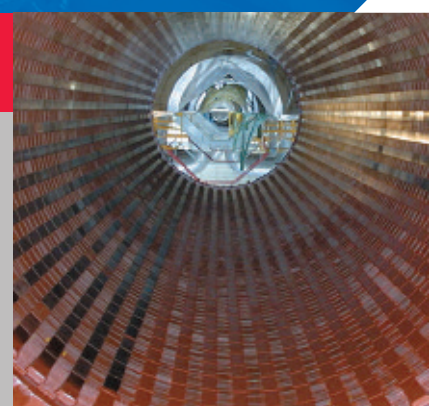
Spinning pit in Jeumont factory



Reassembly of end bell on 80 MW rotor



 energy efficiency



Our resources

Enable us to guarantee fast action in the factory or on site

On site

Professional logistics, organized to ensure:

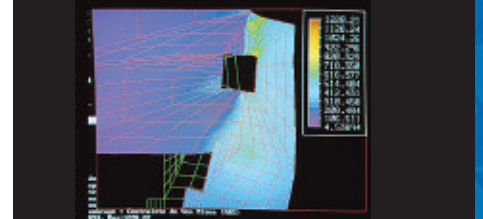
- Safety and cleanliness: constitution and marking off of a clean zone, installation of tents over the ends of the stator during the winding operation.
- Fast reaction: JEUMONT Electric services division has effective and adapted resources to ensure the autonomy of its worksites:
 - trailers specific to each operation: winding (refrigerated), mechanical works, logistics,...
 - specialized tools: variable high frequency induction heating device for multiple applications, lifting units with capacities of 400 and 1000 tons, vacuum systems,...
 - test equipment: El Cid equipment, dielectric testing cabins, fast recorders, vibroports, etc.



In the factory

- **High-performance engineering resources and specialized computational software:**
 - electrical dimensioning,
 - finite element calculation,
 - stress modelling,
 - cooling air flow modelling,
 - etc.
- **Powerful industrial resources on 50,000 sq. meters of covered floor space:**
 - a Global Epoxy VPI facility for stators weighing up to 80 tons and up to 20 kV,
 - a balancing pit with a capacity of 250 tons at 1800 rpm and 80 tons at 3600 rpm
 - lifting capacity of 400 tons, using travelling bridge cranes
 - 2 pressurized clean areas for generator rotors winding (capacity 200 and 400 tons).

Stress analysis of an end bell assembly



Site mobile workshop



Overhaul area setup 900 MW generator



JEUMONT JIREN AVR



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