Electrical Engineering Systems for Power Plants
Persuasive solutions:
SAG – a service provider in demand

The electrical engineering infrastructure in modern industrial society is a complex field in which the SAG Group has a great deal of experience. The energy industry, industry in general and clients from the public sector value us as a competent partner. Our business unit Services Germany is responsible for customer service activities. Its functions also include the planning, realization and maintenance of electrical engineering infrastructures for power plants.

Your Partner for Energy related Infrastructure

With approximately 8,000 employees, the SAG Group generates an annual turnover of around €1 thousand million. The core markets are Germany and neighbouring countries in Western and Central Europe as well as project-related business in other European countries and worldwide. SAG has more than 100 locations in Germany to underline its nationwide presence.
Professionalism and experience
SAG’s business unit Services Germany enjoys a good reputation as a national service provider. In the customer service field, we deliver complete projects or individual services in accordance with requirements.

All branch offices offer a wide range of services for energy producers, energy providers, industrial enterprises and public utilities. Many years of experience guarantee competence and customer-oriented know-how. Our range of solutions and services extend from planning, logistics and the execution of construction work to operational maintenance.

The SAG’s business unit Services Germany covers the following areas:
- Medium and low voltage networks
- Pipeline networks
- Energy plant technology
- Lighting systems
- Communications networks
- Traffic engineering

Power plants require a flawless electrical engineering infrastructure
Power plants are complex systems with a multi-layered electrical engineering infrastructure. In the case of new build power stations, work begins with the provision of the high capacity site power supply and extends from planning the cable routing and power distribution systems through process control engineering to lighting installations and fire safety systems. To achieve this, scores of kilometres of cable have to be laid. Countless items of equipment and plant sections need to be scheduled, installed and subsequently serviced. This requires competent planning engineers and technicians and a feeling for the whole project.

Sought-after partner for building owners and power plant operators
If you are planning to build or operate a new power station or optimize an existing power plant, you need a contractor with a great deal of experience and the necessary manpower. Bundling electrical engineering assignments under the control of a single contractor has been proven to prevent losses and provide for seamless operation. We have made a name for ourselves in the power plant sector as a responsible partner for complete electrical engineering infrastructures including power station control technology. Our services portfolio thus also includes auxiliary plant installations.

Our experience extends to power plants of all sizes, from large power stations in the power industry to industrial power stations. Due to high energy prices and the resultant effects on competitiveness, demand for power stations at energy-intensive industrial sites has increased. This includes gas-fired power stations, power stations for “substitute fuels”, gas and steam plants and combined heat and power stations (with heat recovery).

The economic success of such power generation plants depends on how efficiently the power station is designed, built and operated. Electrical engineering systems play a key role in this process.
Complete electrical engineering solutions for large power stations and industrial power plants

Wherever energy is to be produced, energy must first flow in order for all systems to function smoothly. On behalf of public utilities or general contractors, we provide all the necessary electrical engineering services for new builds and the optimization of existing power stations of all sizes. We supply complete turnkey solutions but also undertake individual assignments.
New build power stations are huge construction sites and require a resilient site power supply. The entire complex must then be successively equipped with electrical engineering services. This begins in the core area of energy production and includes auxiliary plants and equipment. Special expertise and experience is required when taking on responsibility for this technical infrastructure – whether for a new build power station, subsequent optimization or upgrading.

**Farsighted in planning:**
**Demand analysis, design and engineering**
Any planning activity begins with an analysis of demand. In doing so we create options for modular expansion so the plant can grow as demand increases.

Planning services based on the outline concept range from basic and detailed engineering through procurement to construction management. The design, which extends from cable route management through electrical installation, control and instrumentation to process control engineering, takes in the entire scope of the electrical engineering infrastructure. Many clients place great value on the fact that everything comes from a single service provider. The SAG Group can meet this requirement unreservedly.

**Cautious in practice:**
**Delivery, installation and commissioning**
As we are strictly neutral with regard to products and manufacturers, we have access to the complete range of products and services available in the field of electrical engineering. Certification to DIN EN 9001 guarantees optimum material quality. On-time delivery and traceability of all products are a matter of course as far as we are concerned. Efficient product management provides for fast, smooth processes during the construction and installation phases. All systems are then checked meticulously during commissioning and the interaction of plant sections and auxiliary plants and equipment is optimized. The goal is best possible operating reliability at optimum performance. All steps are fully documented.

**Lasting partnership:**
**Service and maintenance**
Our responsibility does not end on handing over the plant or sections thereof; at the client’s request it also includes service and maintenance. The fact that we are familiar with all the details, as we were involved at the planning stage, proves to be a great advantage at this point. We offer the best possible prerequisites for long-term investment protection by way of 24 hour service availability, electrical and mechanical machine servicing provision and tried and tested spare parts logistics.

**Universally applicable: Full service for power station auxiliary plants**
Power stations also include auxiliary plants and equipment, e.g. coal feeding and ash handling plant with kilometres of conveyor systems. The efficiency of energy production also depends on the smooth operation of these systems. If a conveyor belt fails on an item of auxiliary equipment, this could have serious consequences for the operation of the power station. On behalf of the owner we take on responsibility for the operation, maintenance and repair of auxiliary plants and equipment and by way of 24 hour service availability guarantee flawless electrical and mechanical operation.
Complete down to the last switch: Four practical examples

Power station operators know that they can transfer complete responsibility for their electrical engineering equipment to us. In doing so the customer gets the benefit of our comprehensive administration and meticulous site organization. The client gets all services from one source. A few examples will give you an insight into our wide range of services.
Electrical engineering infrastructure for the world’s most effective brown coal power station

In Niederaußem near Cologne, RWE Power AG built a brown coal power plant with a capacity of 1,000 MW. SAG was commissioned to plan and install the electrical engineering infrastructure. This included the site power supply, planning, installing and routing 100 kilometres of cable, managing 25,000 cables using the REKAP system and laying all cables and connections. Likewise planning and installing the power supply and lighting system (more than 11,000 lighting outlets), earthing and lightning protection systems and fire protection installations. Due to the positive experience the customer intends to include SAG on similar projects in the future.

Complete electrical engineering for an industrial power station

A state-of-the-art combustion plant for substitute fuels is being built in the north of Germany. Experts from SAG are planning and installing the complete electrical engineering infrastructure. The wide range of services includes complete cabling, all switching and distribution equipment (low and medium voltage), auxiliary transformers, emergency power systems, power distribution up to and including power outlets, lighting, comprehensive measurement and control technology, automation equipment and process control engineering. A data archiving system, interfaces to enterprise resource planning systems, communications equipment and remote maintenance system were also included in the order.