



Measurement, Control and Electro-Technology in the Production of Electricity

The supply of power is the lifeline of each modern society. Life without a secure and reliable source of power is unimaginable. The basis for the future of our society is modern power plants complemented with renewable energies. Our company provides with its know-how in the fields of installation and MSR-technology an important contribution to the environmentally friendly extraction and safeguarding of the production of energy world wide.



IFA. So that your system runs securely and reliably.

With our experience in the area of power plant construction we offer you the complete spectrum of engineering from procurement, installation of the systems to registration of measurement values, realisation of the electro-technology and control technology but also the commissioning and maintenance of your systems.

Our goods and services at a glance.

Cable conduit routes and protective pipes



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Cable pulling for electro- and control-technologies



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Cable connecting and earthing



► Page 6

Mechanical testing and commissioning



► Page 7

Our experience in the area of execution is your advantage.

RADIATION PROTECTION AND HEALTH TECHNOLOGY

Security on the highest level. The personal integrity and health of our employees is our foremost target. For this purpose we offer all necessary prerequisites and services.



DOCUMENTATION OF ALL WORK PROCEDURES

Optimal traceability. We offer our clients a comprehensive documentation of all realised work so that the highest quality and traceability of all activities are guaranteed.



APPROPRIATION OF LEADING PERSONNEL

Your personnel profits from our experience. Our qualified and experienced leading personnel is the basis for the proper realisation of all work. Our leading personnel guarantee together with our qualified fitters the optimal execution of all work.



Primary registering of measurement values



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Construction of electrical cabinets



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References



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Cable conduit routes and protective pipes

Installation of cable trays, cable circuits and protective pipes

The most comprehensive work in a power plant is the installation of the cables. A lot of experience is necessary for this, because these installations differ significantly from those ones in the normal industrial area. In particular the stand-by redundancies must be adhered to so that for example in the case of fire a power

plant can be further operated. For this reason the installation of the cable trays and the protective conduit must be carried out in a considerably more robust manner. The professional construction of this installation work is guaranteed because of the many years of experience of our employees in the area of power plant construction.



Our services

- ▶ **Delivery and installation of the cable trays**
Cable tray installation including the complete accessories that are necessary for the installation.
- ▶ **Delivery and installation of cable protective pipes**
In open or closed specifications, optionally galvanized, in stainless steel, aluminium or from plastic.
- ▶ **Delivery and installation of cables and railing canals**
Suitable for power supply and IT infrastructure. Installation in industrial plants but also administration buildings.

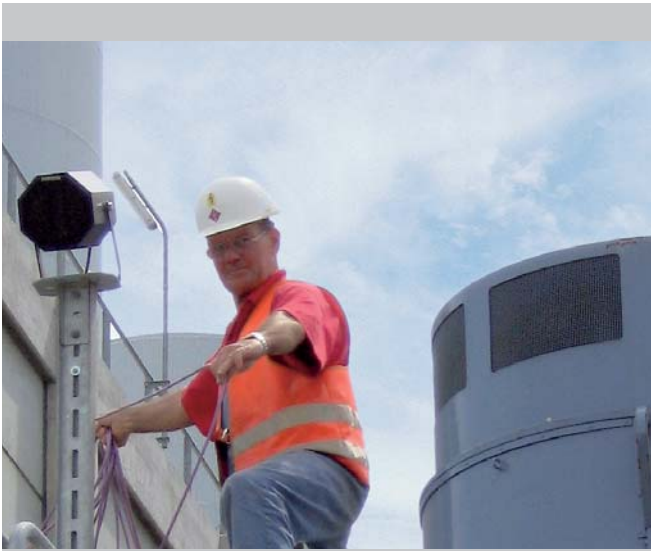
Cable pulling for electro- and control-technology



Laying of cables for high voltage current, control technology and network

The laying of cables for high voltage current, control technology and network in power plants requires a lot of experience and know-how. The various cables require different methods of handling. That the company IFA masters this professionally

has been proven already in various projects (See references on page 10). Our company is in the situation to react promptly also in critical phases e.g. under time pressure and to offset an increased demand for personnel.



Our services

► **Delivery and laying of high voltage current**

Laying of high voltage current including the complete and necessary fastening material.

► **Delivery and laying of measurement and control cables**

Laying of cable trays in protective tubes or in cable canals with separated arrangement of the wiring to the high voltage current cables.

► **Delivery and laying of network lines**

Laying in industrial production systems and administration buildings of the "complete structured IT infrastructure" with fibre optics and copper lines.

Cable connecting and earthing



Our services

► **Connecting and earthing of high voltage current**

Connection and earthing of high voltage current. Protocols of the revolution per minute and the documentation of the connection work if necessary .

► **Connecting and earthing of measurement and control cables**

Connecting of the cables with a screw clamp, spring type terminal clamp, MTP (Max-Termi-Point), wire-wrap and soldering.

► **Connection of network lines**

Connection of copper, fibre optic and plastic lines. Splice work carried out by very well trained personnel including measurement and connections.



Connection of and earthing of cables for high voltage current, control technology and net work

The connection work with high voltage current, control technology and network cables is carried out by our installation personnel professionally and on schedule. A certain specialisation of the fitters is an

advantage for the diverse cables thereby a high effectiveness is reached. The work with fibre optic cables (LWL) requires a special training. Our company has acquired a lot of experience especially in the area

of power plants in the last ten years. The connection and documenting of power plant work has a very high priority.

Mechanical testing and commissioning

Testing of the cabling and the commissioning of the machine and its systems

The testing of the cabling but also the technical functional controls are an important part of the work of our company. The testing of the cabling is necessary so as to avoid any delays in the commissioning process. The

prototyping is carried out by the IFA independently and precisely. Our company was highly recognised by all participating persons in supporting the international commissioning team in the power plant in Ringhals (Sweden).



Our services

- ▶ **Testing of the wiring**
- ▶ **Testing of the insulation**
 - Conductor against conductor
 - Conductor against protective earth conductor
- ▶ **Testing of earthing and of the conductor**
- ▶ **Measurement of insulation of the network lines**
- ▶ **Technical functional control (TFC) of the machines and systems**
- ▶ **Documentation of the testing**
- ▶ **Compiling of the respective measurement protocols**

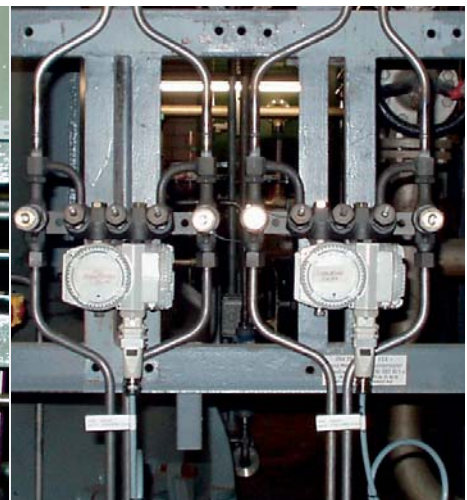
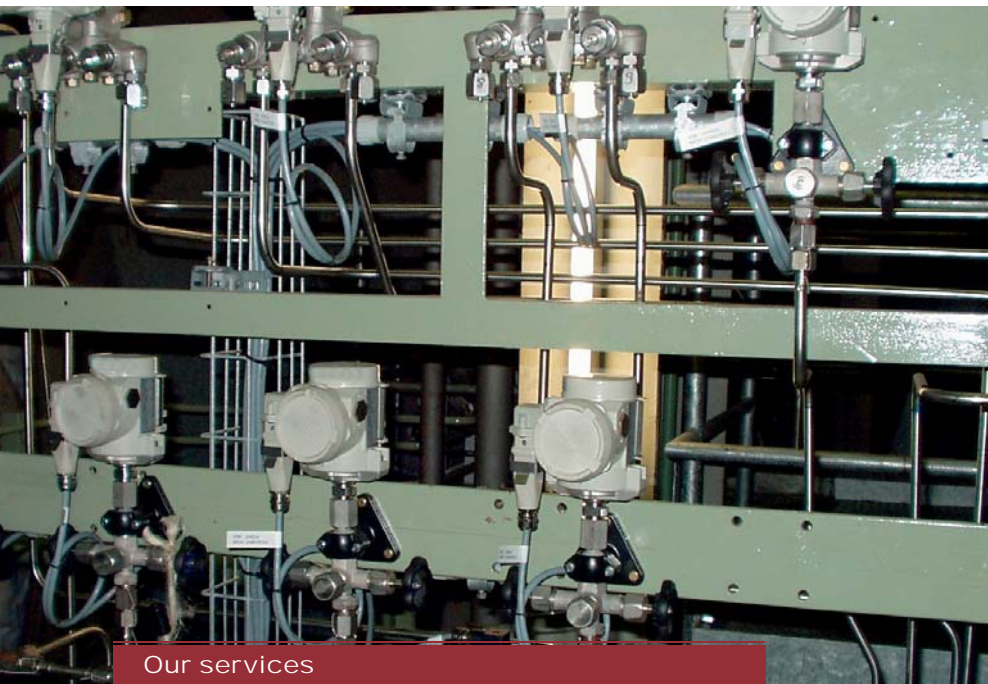


Recording of primary measurement values

Fitting and testing of transmitters, pushbutton switches and other sensors

The recording of the primary measurement values is one of the most important components in a power plant. It connects the process with the control technology. Our company has many decades of experience in the installation of transmitters, pushbut-

ton switches, manometers but also the laying of measurement cables. The components are installed by us on measurement frames or fitted individually. The compression tests of this system are also a part of our wide range of services.



Our services

- ▶ Construction and fitting of the measurement and analysis equipment
- ▶ Laying of process and measurement cables according to the mechanical measurement order (Hook up)
- ▶ Testing for (leak) tightness
- ▶ Calibration and parametering of the electrical and pneumatic measurement and analysis equipment
- ▶ Electrical and pneumatic testing of the measurement circuit (Loop check)
- ▶ Technical and functional control of the electrical and pneumatic circuits and functional units.



Construction of the switch cabinets



We produce switch cabinets according to their individual requirements in our modern production locations.

Electrical control stations make up the basis for the recording of the sensors and the control of the actuators with the help of intelligent program procedures. We offer you the respective equipped production location to

produce your switch cabinets for the distribution of electrical power for extra-low, low and medium voltage switch cabinet systems but also the recording of the sensors and the control of the actuators. Our experts

produce switch cabinets according to your individual requirements modular or conventionally onto the mounting plates i.e. using 19" technology.



Our services

- Switch cabinets with modular construction or conventionally onto the mounting plate
- Switch cabinets for measurement, control and regulation technology
- Switch cabinets in 19" technology
- Switch cabinets for the IT infrastructure
- Operator station in hanging – or standing – layout
- Switch cabinets for the use in open areas with protection category IP67

References.

Conventional power plants

Gas and steam power plant Termoli in Italy



Realised work

- ▶ Electro-, control- and steering-technology
- ▶ Installation of cable trays and laying of protective pipes
- ▶ Cable laying and cable connections
- ▶ Wiring and connecting of the network infrastructure
- ▶ Installation of the object surveillance system
- ▶ Support for commissioning and error recovery

Power plant München south

Realised work

- ▶ Electro-, control- and steering-technology
- ▶ Installation of cable trays and laying of protective pipes
- ▶ Cable laying and cable connections
- ▶ Installation of the generator lines
- ▶ Support for commissioning and error recovery



Coal power plant Schkopau



Realised work

- ▶ Electro-, control- and steering-technology
- ▶ Installation of cable trays and laying of protective pipes
- ▶ Cable laying and cable connections
- ▶ Wiring and connecting of the network infrastructure
- ▶ Support for commissioning and error recovery

Nuclear power plant

Oskarshamm, Sweden

Realised work

- Electro-, control- and steering-technology
- Installation of cable trays and laying of protective pipes
- Cable laying and cable connections
- Installation of the switch cabinets
- Wiring and connecting of the network infrastructure
- Support for commissioning



Ringhals, Sweden



Realised work

- Electro-, control- and steering-technology
- Installation of cable trays and laying of protective pipes
- Cable laying and cable connections
- Installation of the switch cabinets and distribution boxes
- Wiring and connecting of the network infrastructure
- Support for commissioning

Leibstadt, Switzerland

Realised work

- Electro-, control- and steering-technology
- Installation of cable trays and laying of protective pipes
- Cable laying and cable connections
- Installation of control technology and module switch cabinets
- Wiring and connecting of the network infrastructure
- Installation of the simulation and training switch room



IFA. Your partner for automation technology.

IFA Measurement-, Control- and Electro-technique GmbH located in Neuenstadt a.k. was established in 1969 as an engineer office for automation technology. A modern service oriented company is the result of this former engineering office, that in the first instance was working with the selection, dimensioning and commissioning of devices in the area of measurement and control technology. Today the company IFA offers a wide range of services all round automation technology.



Certified by:



ISO 9001:2008



OHSAS 18001



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Member of:



Member of Deutsche Gesellschaft für Qualität e.V.



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