POWER BUSINESS OF INVELT COMPANY

- Reconstruction, modernization and/or upgrading of power plants
- Low voltage electrical systems, control systems and field instrumentation
- Modernization of hydraulic-mechanical or mechanical control systems for turbines from 0.5 MW to 1000 MW (design, manufacturing, commissioning and testing)
- Elliott turbines representation

SCOPE OF PROVIDED ACTIVITIES:

- Expert services for diagnostic and analysis
- Rehabilitation, reconstruction, modernization, modification of equipment designed by any producer
- Spare parts delivery

ADVANTAGES OF RECONSTRUCTIONS:

- Higher operation reliability
- Higher control accuracy
- Better dynamic control quality
- Easier maintenance
POWER BUSINESS OF INVELT COMPANY

SELECTED REFERENCES:

INVELT equipment and services deliveries for power stations, sugar plants and other industrial factories are world-wide, therefore, let us provide you with several references from our extensive reference list:

Power Plant Plzenska Energetika, Czech Republic
Unit 10 - 28 MW SKODA turbine originally with mechanical speed governor - Control system replacement with the direct electronic control
- Design, delivery, assembly, commissioning and test run

Power Plant Energotrans Melnik I, Czech Republic
Control system modification of the TG 5 a TG 6 SKODA turbines – Installation of three-channel overspeed protection system with Woodward ProTech 203 and new trip relay
- Design, delivery, assembly, commissioning, test run

Power House YC Rio Turbio, Argentina
Refurbishment of the TG3 SKODA turbine and related spare parts delivery
- Design, delivery, assembly, commissioning, test run
POWER BUSINESS OF INVELT COMPANY

SELECTED REFERENCES:

Nuclear Power Plant Jaslovske Bohunice,
Control system modification of four 220 MW SKODA turbines – Direct electronic control and three-channel overspeed protection
- Design, delivery, assembly, commissioning and test run

Nuclear Power Plant Dukovany, Czech Republic,
Control system modification of eight 220 MW SKODA turbines – Turbine CV direct electronic control, three-channel overspeed protection, control of bypass stations.
- Design, delivery, assembly, commissioning and test run
POWER BUSINESS OF INVELT COMPANY

SELECTED REFERENCES:

**Power Plant Talkha, Egypt**
Control system modification of Unit 1 SKODA 210 MW turbine
- Design, delivery, assembly, commissioning and test run

**Power Plant Novaky, Slovakia**
Control system modification of the TG3 and TG4 SKODA 110 MW turbines
- Design, delivery, assembly, commissioning and test run

**Daura Refinery, Irak**
Delivery of 6 Elliott steam turbines – pump drives

**Dewan Sugar Mills Ltd., Pakistan**
Delivery of newly designed replaceable turbine spare parts (oil pumps, …)
POWER BUSINESS OF INVELT COMPANY

SELECTED REFERENCES:

**Power Plant Orhaneli, Turkey**
Control system modification of the 210 MW LMZ turbine
- Design, delivery, assembly, commissioning and test run

**Textile Plant Bintang Agung, Indonesia**
Turn-key delivery of turbo-generator
  – Design, delivery, assembly, commissioning and test run

**Aluminium Company of Egypt (Egyptalum), Egypt**
Vibro-diagnostic measurement and analysis of Alstom turbine
- Repair of LP and HP part of Alstom turbine, opening, checking, disassembly, sand blasting, dynamic balancing of the HP rotor at the vacuum tunnel at speed of 20 000 rpm, coating of gland steam rings, assembly, measurement, balancing and commissioning

**Power Plant Seyitomer, Turkey**
Control system modification of three 150 MW turbine units
Manufacturer: Franco Tosi and Mitsubishi
- Design, delivery, assembly, commissioning
POWER BUSINESS OF INVELT COMPANY

SELECTED REFERENCES:

Mirant Power Plant, Sual, Philippines
Modification of HP and IP control valve servomotors on 647 MW Alstom turbine
- Design, delivery, assembly, commissioning and test run

Egyptian Sugar & Integrated Industries Co., Egypt
Delivery of excitation systems and generator protections and turbine control system for TG 4 – 16 MW, switchgears, generator output and neutral systems etc. for various sugar factories
- Delivery of Elliott turbine for a mill drive

SUDCCO, Iran
Technical assistance – assembly supervision of eight drive turbines and replacement of the damaged rotor of the mill turbine

Power Plant Layyah, United Arab Emirates
Control system modification of Ansaldo turbine
- Design, delivery, assembly, commissioning and test run
POWER BUSINESS OF INVELT COMPANY

SELECTED REFERENCES:

Power Plant Soma, Turkey
Control system modification of four SKODA 165 MW turbines
- Design, delivery, assembly, commissioning and test run

Power Plant Qurayat, Saudi Arabia
Upgrade of the GT1 a GT2 control systems
- Design and delivery of equipment for modification of the fuel nozzle valve servomotor for BBC Gas Turbine Unit, disassembly of the existing one, assembly, testing and commissioning

Power Plant Komorany, Czech Republic
Reconstruction of the TG 21 turbine control system
- Delivery and modification of the governing system, assembly, disassembly, testing and commissioning
POWER BUSINESS OF INVELT COMPANY

SELECTED REFERENCES:

**Power Plant Hodonin, Czech Republic**
Reconstruction of the TG 3 turbine control system - 60MW steam turbine
- Design, delivery, disassembly, assembly, testing and commissioning

**Catalagzi, Tuncbilek and Kangal Power plants, Turkey**
Control system modification of four 150 MW turbine units
- Modification of existing mechanical-hydraulic control system
- Installation of new EH VOITH converters
- Electronic speed measurement
- Preservation of the existing hydraulic overspeed protection

**Thermal Power Plant Pernik, Bulharsko**
Reconstruction of the hydraulic control system of the Skoda TG4 - 25 MW turbine
- Design, manufacturing, delivery, disassembly, installation of the new devices, testing and commissioning
POWER BUSINESS OF INVELT COMPANY

SELECTED REFERENCES:

**Pilsner Energy ELÚ III, Czech Republic**
Reconstruction the old TG10 turbine mechanical - hydraulic governing system
- Design, assembly, disassembly, supervision of installation, commissioning

**Pilsner Energy ELÚ III, Czech Republic**
Reconstruction the TG9 turbine hydraulic governing system
- Design, assembly, disassembly, supervision of installation, testing and commissioning

**Power Plant Planta Centro, Venezuela**
Reconstruction of the TG20 turbine hydraulics
- Supply of hydraulic system modification of the 400 MW BBC steam turbine
- Delivery, assembly, supervision of installation
POWER BUSINESS OF INVELT COMPANY

SELECTED REFERENCES:

**Power Plant Salmisaari, Finland**
Modernisation of the steam turbine – delivery of servomotors of control valve and stop valve servomotors
- Design and delivery

**Talkha Power Plant, Egypt**
Upgrade of electrohydraulic control system SKODA Unit 2, 210 MW
- Design, delivery, supervision of disassembly and assembly, adjusting, testing, commissioning and local staff training

**Power Plant Opatovice, Czech Republic**
Retrofit of the TG4 turbine hydraulic control system
- Design, assembly, disassembly, supervision of installation, testing and commissioning

**Power Plant Melnik, Czech Republic**
Reconstruction of the TG 10 turbine hydraulic control system
- Design, assembly, disassembly, supervision of installation, testing and commissioning
SELECTED REFERENCES:

**Power Plant Melnik, Czech Republic**
Reconstruction of the TG 10 turbine hydraulic control system— independent position control of each HP and LP control valve
- Design, assembly, disassembly, supervision of installation, testing and commissioning