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France

Nuclear

Client: EDF (Electricité de France)

Business Challenge:
› Nuclear power plants management: a massive task with no margin for errors
› Bureau Veritas is active in 19 PWR of the 58 reactors in France
› Maintaining the image of a "responsible organization"

Solution:
› Constant and permanent surveillance of every sort of installation; a total safety approach
› Periodic regulatory and non-regulatory services (e.g. investigation, non-destructive testing and pressure testing, fire safety checks)
› Non destructive testing during planned outages
› Training and auditing

Benefits:
› EDF is able to go beyond the legal requirements in its strict QHSE&SA standards, which the company considers important in the context of atomic energy
› E.G. their gas and liquid emission levels are up to 100 times lower than what is actually authorized

Client: Areva
Project: George Besse 1 – nuclear waste treatment plant
Services: › Independent Remaining life assessment for major equipment prior to license extension request approval by the French Nuclear Safety Authorities
Fossil Fired

Client: Suez Energy
Project: Fos Cogeneration power plant – gas fired – 400 MW
Services:
› Siting assistance to regulatory compliances
› Environmental impact analysis

Client: Gaz de France
Project: Cogeneration power plant – gas fired – 400 MW
Services:
› Siting assistance to regulatory compliances
› Environmental impact analysis

Client: Cofathec
Project: DK6 Cogeneration plant – gas fired – 800 MW
Service:
› Performance testing
› Emissions measurement

Client: EDF
Project: Porcheville Power Station (4x600MW, coal)
Services:
› Periodical Inspections for all electrical, pressure, boilers and lifting/crane equipment

Wind Power

Client: Gamesa Eolica, Repower, Enercon, GE Wind, Vestas, Nordex, Jeumont
Project: More than 350 Windmills
Services:
› Electrical Conformity Assessment
› Machine Conformity Assessment (CE Marking)
› Civil & Structural Engineering Independent Review
› Health & Safety on Site during Erection
Denmark

Wind Power

Client: Suzlon Energy
Suzlon Energy being one of the fastest growing Wind Energy key companies in the world has its headquarter in Denmark and subsidiaries in US, Australia (for Asia Pacific Market), China, India, Germany and Netherlands.

Services: Bureau Veritas contract covers inspection and technical assistance services including productions assessment, involvement in kick off meeting, review of technical documents and non conformity assessment. BV-Net will be used as the information system for this frame agreement.

Finland

Nuclear

Client: TVO
Project: 1600 MW PWR, 3rd Generation NPP located in Olkiluoto, Finland

Services: Review of approval of Construction Plan for Safety Class 3 and 4 mechanical & electrical equipments
Construction Inspections
Manufacturing Supervisions
Manufacturing inspections covering European countries such as France, Germany, UK and Italy
Specific set up of Intranet (BVnet) to communicate all reporting to the client.
Fossil Fired

Client: Kvaener Power Oy
Project: Bubbling Fluidized Bed Boilers
Services: Certification according to PED Directive 97/23/EC Module G
          Particular Material Appraisals
          Design approval including safety related system
          Manufacturing inspections
          Assembly inspections including final testing
          Verifying FAT of SRS
          Final documentation review and issuing of certificate

Client: Foster Wheeler Oy
Project: Wilton Biomass Power Plant
        Lomellina II 75 MW RDF Fired Power Plant
Services: Certification according to PED Directive 97/23/EC Module G
          Particular Material Appraisals
          Design approval including safety related system
          Manufacturing inspections
          Assembly inspections including final testing
          Verifying FAT of SRS
          Final documentation review and issuing of certificate

Client: Wartsila Finland Oy
Project: Various diesel & gas engines
Services: Third Party inspections
Germany:

Nuclear

Client: RWE
Project: Biblis Nuclear Power Plant
The plant consists of two units, pressurized water reactors, with a total electrical capacity of about 2,500 MW.

Services:
- Manual NDT examination of reactor A & B shutdowns and in service
- More than 75,000 NDT tests performed since 1986 (Radiographic, Ultrasonic, Surface Crack Testing, Mobile Hardness Testing), special UT Testing of fittings / valves
- As-built documentation, inspections-isometrics, 3D documents for planning of shutdowns
- Databases for inspection and maintenance optimization
- Inspection manuals for equipment

Fossil Fired

Client: Siemens AG
Project: Al Ezzel Power Plant, Bahrain (950 MW)
Ras Laffan Power Plant, Qatar (750 MW, Water & Power)
Sugen CCGT, Surat, India (1100 MW)

Services:
- Erection supervision of recovery steam generator
- Expediting of components of heat recovery steam generators and auxiliary steam generators
- QA/QC supervision and coordination

Wind Power

Client: Nordex Energy GmbH

Services:
- Review of documentation and legal requirements at Tortosa site in Spain during erection of windmills
- Supervision of on-site work safety
Italia

Fossil Fired / Hydro

Client: Enelpower
Project: Chivasso Power Station (1140MW, thermo-CCGT)
Services: Expediting and Inspection Services

Client: Technip
Project: Termoli (CCGT, 770MW)
Services: ATEX Services

Client: Nuovo Pignone
Services: Gas turbine, compressors package
Pressure Equipment Directive services

Client: Enelpower
Project: Turbines, Runners for Chievo’s Hydroelectric Plant
Services: Expediting & Inspection Services

Client: Enelpower
Project: Turbines, Runners for Bussolengo’s Hydroelectric Plant
Services: Expediting & Inspection Services

Client: Foster Wheeler Italia
Project: RDF gas fired power plant (75MW)
Services: Pressure Equipment Directive services

Wind Power

Client: Gamesa Eolica
Project: Monte Magiore Belsito, Sicily – (24MW)
Services: Health & Safety Coordination during erection of the wind Mills
Adaptation to local regulations
Compliances Monitoring
Netherlands

Fossil Fired

Client: Essent
Projects: Amer Power Plant (coal, 1305 MW), Claus (steam, gas, 1278MW), Moerdijk (Gas, 358MW)

Services:
- Providing a complete set of services for 46 operating power plants (coal, supercritical and critical, CHP, cogen, gas-fired)
- Air emissions (NOx, SO2, CO, CO2, etc.)
- Performance testing for new machines and after overhaul
- PED/CE Marking
- Process & sewage water management and analysis
- Safety Inspections for burners
- Non destructive testing
- Safety and Operational Technical trainings for boilers
- Tuning of gas turbines

Client: Electrabel
Project: Cogen WKC “de Grift”
District Heating 3 Boilers

Services:
- Performance Testing & Emissions measurements
- NOx Trading Measurement
- Gas turbines mapping
Spain

Fossil Fired

Client: Iberinco / Iberdrola
Project: Aceca Combined Cycle (400MW)
Services: Technical Assistance and Quality control on site (PED Certification, Machinery Inspections)
Worldwide Manufacturing Shop Inspection

Client: Gas Natural
Project: Escombreras Combined Cycle (3 x 400MW)
Services: Worldwide Manufacturing Shop Inspection

Client: Iberinco / Iberdrola
Project: Arcos 1, 2 & 3 Combined Cycle (2x400 MW, 800MW)
Services: Technical Assistance and Quality control on site (PED Certification, Machinery Inspections)
Worldwide Manufacturing Shop Inspection
Inspection of Pressure Equipment off-loading

Client: Elyo Iberica Energia
Project: Solvay-Martorell Cogeneration (22MW – gas)
Services: Independent Performance Testing during commissioning
Emissions Monitoring Measurements and Analysis (O2, CO, CO2, NO, NO2, NOx)

Client: CNIM
Project: Zabalgarbi Waste to Energy Plant (44MW, 30t/h)
Services: Performance Testing (Net Electrical output power, Net heat rate, Flue gas emission after treatment and at HRSG main stack, Gas turbine flue gas emissions)
Emissions Monitoring (CaO, SiO2, Fe2O3, CaCO3, MgO, H2O)

Client: Tractament Metropolità de Fangs, S.L (Gas Natural)
Project: (6x4.125 MW – Gas Engines)
Services: Independent Performance Testing during commissioning
Analysis of combustion/emissions (O2, CO, CO2, NOx)
Atmospheric pressure and ambient air temperature at charge air inlet
Measurement of electrical power generation
Establishment of specific gas consumption based on lower heating value
Establishment of specific lubricating oil consumption
Noises, acoustic pressure levels
Other Projects

Client: Iberdrola

Wind Power

Client: Gamesa Eolica
United Kingdom

Nuclear

Client: **British Energy**  
AGR Power Stations - Heysham Stage A & B, Hartlepool & Hinkley Point (2x575 MW, 2x625MW, 2x605MW, 2x610MW)

Project:  
› Our verification role will help ensure the safe and reliable operation of the power stations. This win is a major success, especially since the previous inspection company had the contract for over 20 years. Bureau Veritas was chosen for its innovative approach to maximize resource efficiency and maintain high service levels at British Energy nuclear power stations. With this contract, our share of the UK nuclear energy and statutory inspection market is now over 40%.

The initial 3-year contract will involve 30 Bureau Veritas experts. They will inspect 28,000 different items at the sites including pressure equipment, lifting equipment and cranes.

Fossil Fired

Client: **Scottish Power**  
2 conventional coal-fired Power Stations Longannet & Cockenzie (4x300 MW, 4x600 MW)

Services:  
› Electrical and all lifting appliances Statutory Inspections  
› Outage planning management

Client: **Barking Power Station**  
Project: CCGT (1000MW)

Services:  
› Statutory Inspection for all pressure, electrical and lifting equipments  
› Outage Technical Support  
› Emissions monitoring at Barking power station  
› Vibration monitoring of heat exchanger bundle
Wind Power

Client: E.ON – Off Shore Wind turbines
Services: Environment Impact Analysis

Client: Scottish Power – 350 Wind turbines
Services: Statutory Inspection for all lifting equipment

Other Projects

Client: Severn Trent
Project: Networks Distribution Operation & Maintenance Strategy
Services: ATL has developed a cost-optimised Operations & Maintenance Strategy that was based on evaluating historical data collected by STW for delivery to the Regulator.

- Parameters included quality of water, quantity of water delivered to the customer and operation & maintenance costs. Data analysis, which identified 5 grades of risk, was substantiated with the local knowledge of STW personnel at both a Regional and District Metering Area (DMA) level.
- Potential OPEX cost saving of 20% has been identified.

Client: Veolia Sheffield
Project: Waste to energy plant (100,000 tons/year)
Services: Thermal and emissions verification for Sheffield waste to energy scheme

For the Benefit of Business and People
China

Hydro

Client: CTGPC - China YangTze Three Gorges Project Corporation
Project: Inspection and expediting services of 14 turbo-generating units of the left bank of the YangTze River in China. When fully commissioned, it will include 26 X 700MW units installed at the toe of the dam. The dam is a concrete gravity type 185 m high and 2.3 km long. With a 18,000 MW installed capacity, the Three Gorges Project will be the largest hydroelectric complex in the world.

> BV China project management team dispatches 2 expatriate and 6 local inspectors for the resident inspection in China, and more than 10 inspectors outside China

Client: Zhejiang Provinicial Electric Power Company (ZPEPC)
Project: Tongbai Pump Storage (1000 MW)
Services: Shop inspection of all mechanical and electrical equipment for turbine, runner, shaft, generators

> Expediting services

> Services performed over 15 countries

Client: Jiangsu Provinicial Electric Power Company
Project: Yixing Pump Storage (4 x 250 MW)
Services: Shop inspection of all mechanical and electrical equipment for turbine, runner, shaft, generators, transformers, GIS.

> Expediting services

> Services performed over 15 countries
Wind Power

Client:  Gamesa Eólica, S.A.
Project:  More than 400 machines inspected
Services:  › Non Destructive Testing
  › Fabrication Supervision & Inspection of Towers Suppliers
  › Expediting & Inspection at Manufacturing facilities
  › Second Party Audit (Vendors Assessments)
  › WPS/PQR Welding Procedure Auditing
  › Raw Material Inspection
  › Painting Process Control

Client:  GE Wind
Project:  More than 140 Machines inspected
Services:  › Welding & NDT Supervision
  › Documentation Review
  › Painting & Packing Inspections
Japan

Nuclear

Client: Mitsubishi Heavy Industry
Project: Construction of Nuclear Vessel for Olkiluoto 3 EPR in Finland
Services: Monitoring & Qualifications of welding procedures according to RCCM (French nuclear building codes)
> Qualifications of welding material specifications. Qualification of welders
> Witness of nondestructive test during the entire manufacturing process. Witness of hydrostatic test.

Client: Mitsubishi Heavy Industry
Project: Construction of 6 steam generators for EDF
Services: Qualification of Welding Procedure Specifications and issue of Procedure Qualification Records according to French Nuclear Regulations.
> Qualifications of welding material specifications. Qualification of welders
> Witness of nondestructive test for welding procedure qualifications

Thailand

Hydro

Client: EDF- Nam Theun 2 Construction Head Contractor
Project: 1,070 MW trans-basin hydropower plant in Laos
Services: Safety Coordination during construction
> Program and QA/QC Management
> Worldwide Inspection and Expediting Services for major mechanical and electrical equipments.
Middle East

Fossil Fired

Client: Kuwait MEW (Ministry of Electricity & Water)
Project: All power stations of Kuwait
Services: ▶ Inspection of existing equipment such as boilers, pressure piping, cranes, elevators, scada system, etc
▶ Inspection of new equipments inside and outside Kuwait
▶ Quality assurance of welding and NDT activities
▶ Quality assurance during maintenance of power station
▶ Engineering consultancy & training services
▶ To assist new during selection of the maintenance contractors

Client: Union Water & Electricity Company, Abu Dhabi
Project: Fujairah Water & Power Project (500 MW)
Services: ▶ Third Party Field Inspection on Site
▶ Quality Assurance Services
▶ Possible shop inspections

Client: Sohar Power Co
Project: Sohar Power & Water Desalination Plant (585 MW)
Services: ▶ Design review and verification for pipeline (4 lines) and Conformity with ASTM
▶ In site inspection of GRP and GRA pipe installation

Client: DEWA (Dubai Electricity & Water Authorities)
Project: Jebel Ali Power & Desalination Station “L” phase II project (1,300 MW and 55 MIGD)
Services: ▶ Design review of Pressure Vessels / Storage Vessels for destination purposes
▶ Inspection and Conformity assessment according to AMSE

Client: ADWEA (Abu Dhabi Water & Electricity Authorities)
Project: Shuweihat S1 Independent Water and Power (1,500MW, 100MIGD)
Services: ▶ Carry out factories shop inspection pipes and fittings until issuance of factory release certificates (FRC)
▶ Carry out inspection and witness performance test on mechanical equipment (pump, valves, etc.)
United States

Nuclear

Client: Portland General Electric, Oregon
Project: Trojan Nuclear Power Plant Cooling Tower
Services: ➔ Asbestos Abatement Design and Oversight
  ➔ Portland General Electric was in the process of decommissioning the Trojan Nuclear Power Plant Cooling Tower.
  ➔ BV assisted Portland General Electric by providing asbestos abatement services.
  ➔ BV also provided design support and full-time project oversight during the removal of over 8,600 tons of cement asbestos product from the cooling tower interior.
  ➔ During abatement, BV’s activities included: (1) daily and final clearance air monitoring and on-site analysis, containment integrity inspections and final visual inspections, (2) design review of alternate means of asbestos removal, (3) asbestos-contaminated waste water sampling and characterization, (4) regulatory compliance support and interface, and (5) project close-out documentation.

Client: PPL Services Corporation, Pennsylvania
Project: Susquehanna, 2 X 1,176 MW BWR
Services: ➔ Perform all activities prescribed in ASME Section XI, QAI-1 and National Board of Boiler and Pressure Vessel Inspectors rules
  ➔ Code responsibilities during scheduled (or unscheduled) outages in order to witness a representative number of ISI examinations and repair/replacement activities in the plant
  ➔ Reviewing and confirming compliance of all Section XI activities through a comprehensive document review
  ➔ Bureau Veritas’ ANII supervisor will perform a semi annual audit of the Inspector’s activities as required by QAI-1 2005 and additionally audit representative areas of the client’s ISI program as necessary to assure on-going compliance with Section XI requirements.
Fossil Fired

Client: Mountain View – Bechtel Owner Southern Cal Edison
Project: Power Plant 1056 MW
Services: Plan Review and Inspection
> Construction inspections compliances services according to California Building Codes
> BVnet communication intranet

Client: Sempra Utilities
Project: Palomar Energy Center
Services: Plan Review and Inspection
> Construction inspections compliances services according to California Building Codes
> BVnet communication intranet

Client: Calpine Power Company, California
Services: BV is currently providing shop fabrication inspection and expediting services for (15) separate Power projects through a contract with Calpine Power Company at numerous fabrication facilities throughout Europe. The following projects are currently under construction:
> The South Point Project located in Bullhead City AZ, is a 525 MW gas fired power plant.
> The Magic Valley Project located in Edinburgh, TX, is a 687 MW gas fired power plant.
> The Los Medanos Energy Center located in Pittsburg, CA, is a 493 MW gas fired power plant.
> The Westbrook Project located in Westbrook, ME, is a 487 MW gas fired combine cycle power plant.
> The Channel Energy Center located in Houston, TX, is a 516 MW gas fired cogeneration power plant at the CITGO refinery.
> The Baytown Power Plant located in Baytown, TX, is a 704 MW gas fired cogeneration power plant at the Bayer Corporations chemical facility.
> The Freestone Energy Center located in Freestone County, TX, is a 1002 MW gas fired power plant.
> The Hillabee Energy Center located in Tallapoosa County, AL, is a 710 MW gas fired power plant.
Client: General Electric
Project: Inland Empire Energy Center (GE 7H) 800MW
Services: Plan Review and Inspection
- Construction inspections compliances services according to California Building Codes
- BVnet communication intranet

Wind Power
Client: EnXco – Solano County
Project: High Winds Project (162 MW)
Services: Plan Review
- Construction inspections compliances services according to California Building Codes
- BVnet communication intranet

Client: PPM Energy – Solano County
Project: Shiloh windfarm 180MW
Services: Construction inspections compliances services according to California Building Codes
- BVnet communication intranet