Thermal Power Plant
" Nikola Tesla" B

The Corporate Enterprise
Thermal Power Plant “ Nikola Tesla” Ltd.
Obrenovac

Thermal Power Plant " Nikola Tesla" B

Thermal Power Plant “ Nikola Tesla" B is the branch of Corporate Enterprise TPP “ Nikola Tesla" Ltd. Obrenovac.

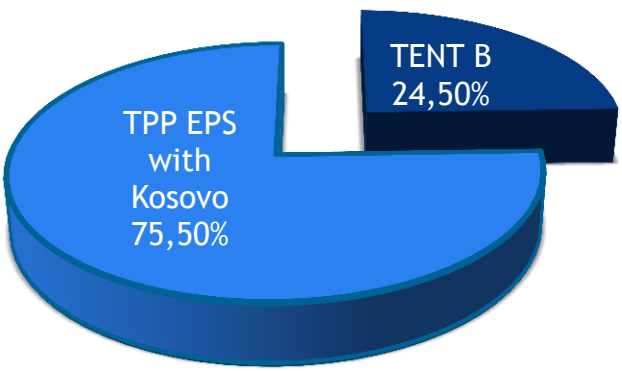
TENT B is situated on the right bank of the Sava River, 50 kilometers west of Belgrade and 17 kilometers upstream of TENT A. It consists of two largest energy Units in Serbia, with the designed capacity of the 620 MW, and they are in operation since 1983 (TENT B1),and 1985 (TENT B2). The Units’ power will amount to 2 x 667.5 MW after the revitalization.

The first studies on the selection of sites for construction were made in the period from 1972 until 1974. Decision on the implementation of the construction of this power plant was brought by the Joint electric -commercial enterprise "Belgrade" early in 1975, and the funds for construction were provided in 1976. This was followed by the design and supply of equipment for these two units. Civil work started in the spring in 1978, the Installation of steel construction of the first unit a year later, so the unit B1 was commissioned on November, 3, 1983, while the unit B2 was connected to the grid on November, 28, 1985.

The location area of TENT B is 156 acres and belongs to the village of Usce and Skela at the altitude of 77.7 meters. All buildings are constructed just near the regional road Obrenovac- Sabac, except for the ash landfill of 600 acres, which is situated 4 kilometers south-east of TENT B. The pumping station, the port for unloading barges (fuel oil) and raw water wells were built on the very bank of the Sava River.

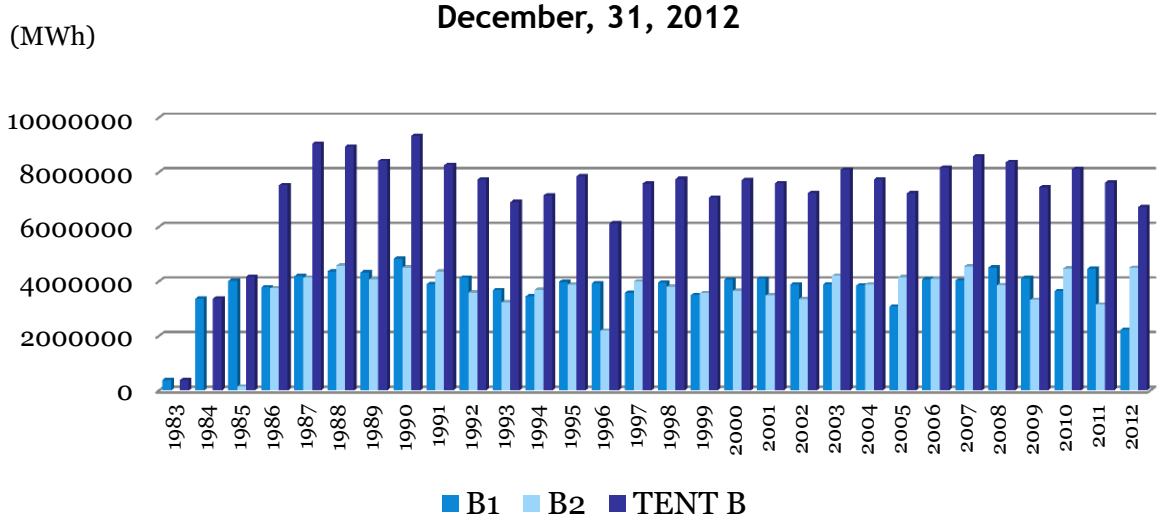
Productive indicators of work

In previous work TENT B units set up almost all records concerning the longest continuous operation, hour utilization, the basic indicators of the efficiency and economies of exploitation.



Participation of TPP " Nikola Tesla B" in the overall production of EPS thermal power plants

Net production from the first synchronization in 1983 to December, 31, 2012



B1

First synchronization November, 3, 1983

- Total production 113.299.968 MWh
- Hours on the grid 210.537
- Total availability 0.84
- Availability without overhauls 0.94
- Hours on full loads 195.345
- Coal consumption 155.982 kt
- Fuel oil consumption 211.237 t
- Own consumption 5,78 %

B2

First synchronization November, 28, 1985

- Total production 104.173.244 MWh
- Hours on the grid 196.022
- Total availability 0.84
- Availability without overhauls 0.94
- Hours on full loads 179.609
- Coal consumption 144.603 kt
- Fuel oil consumption 180.473 t
- Own consumption 5,80 %

Records

TENT B — The highest daily production of electricity

• Unit B1	29.01.2013.	15.140 MWh
• Unit B2	20.01.2009.	14.663 MWh
• B1+B2	22.10.2008.	29.370 MWh

TENT B — The highest monthly production since the first synchronization

• Unit B1	October 1988.	440.346 MWh
• Unit B2	January 2008.	437.940 MWh
• B1+B2	October 1988.	876.871 MWh

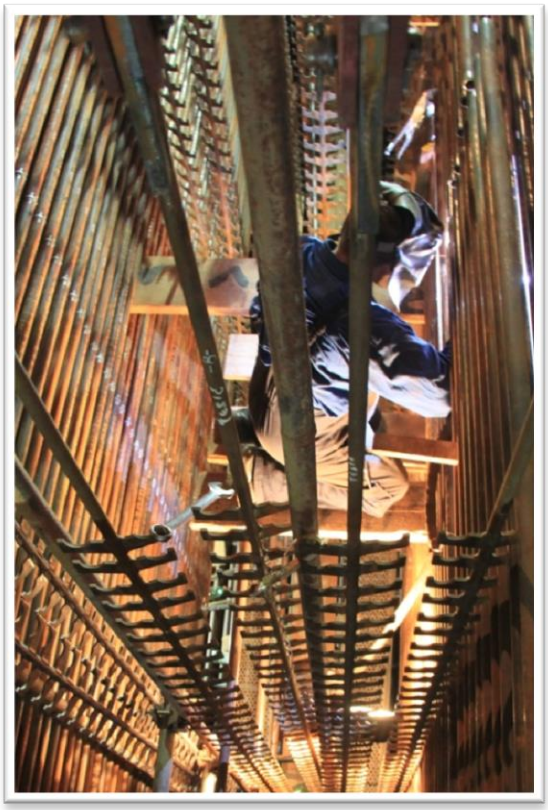
TENT B — The highest production in the year since the first synchronization

• Unit B1	1990.	4.827.333 MWh
• Unit B2	1988.	4.578.357 MWh
• B1+B2	1990.	9.334.006 MWh

TENT B — The longest work of Units between two failures since the first synchronization

• Unit B1 days on grid	15.10.2001.-23.04.2002.	189,2
• Unit B2 days on grid	07.08.1997.-22.12.1997.	137,48

Boiler facility



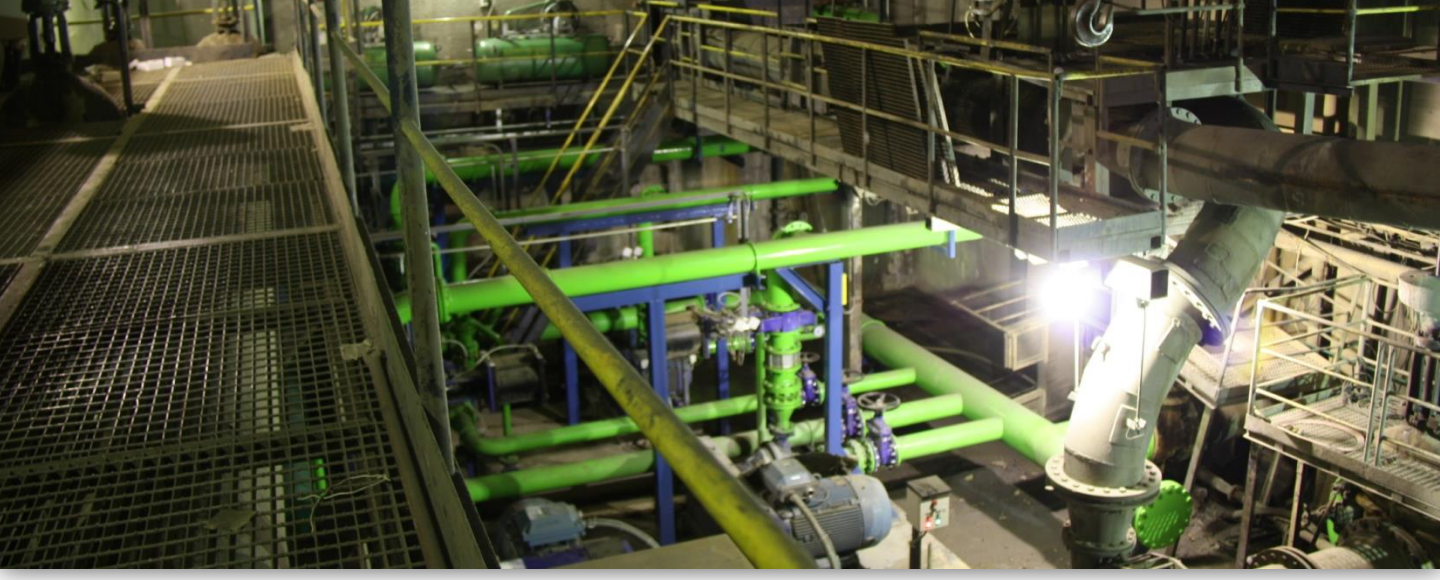
Each TENT B Unit has the once through boiler with a pre-heater and one flow of flue gas.

The boiler is designed like a tower, one-draught with membrane tube walls.

The boiler combustion chamber is quadratic section 20x20m, with the volume 23.000m^3. There are 8 mills on the boiler firebox, two mills with the capacity of 144t/h are located on each side, and the steam mills of unit B1 have the capacity of the 158 t/h after reconstruction.

For fire setting and fire support 16 fuel oil burners are installed, each with the capacity of 3.2 t/h. As the main fuel in the boiler coal is use - Kolubara lignite.

TENT B	The projected state		Condition after the second phase of the revitalization	
Unit power	MW	620	MW	667,5
The live steam flow at the boiler exit	t/h	1880	t/h	2000
The inter-heater steam flow	t/h	1703	t/h	1794
The feed water temperature	˚C	259,2	˚C	261,2
Vapor pressure at the turbine inlet	bar	177,5	bar	177,5
Steam temperature at the turbine inlet	˚C	535	˚C	535
The pressure in the condenser	bar	0,042	bar	0,042
Guaranteed lower calorific value of coal	kJ/kg	6700	kJ/kg	6700



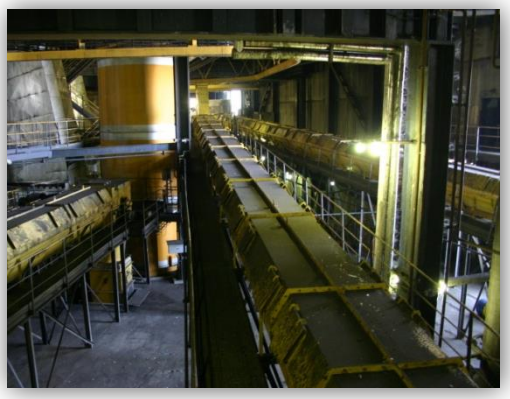
The entire boiler tube system is flexibly hung on top of the steel construction which enables freely dilatation downwards. The total height of the boiler is 137m.

The evaporator is, up to 72 meters, created of welded (membrane) walls with spiral pipe, and above the cote elevation 72 to 113 meters it is continued with vertical pipes. From the cote 113m, in the convective section of the boiler, the evaporator turns into the hanging pipe on which all the heating devices are hang. The additional EKO is hang on its own steel construction.

In the boiler room there are four pre-heaters of steam fresh, three inter heaters and water heaters. Behind the second pre-heater of live steam the exchange heat bifluks is built.

Fresh air is provided by two axial fans with the capacity of 452m^3/s and the efforts of 62.5 mbar which are placed in the boiler room and can take air inside and outside the boiler room. Heating of fresh air is carried out through the steam air heaters and two rotation air heaters of the Ljungstrom type. Flue gases are exerted by two axial fans with the capacity of 824m ^{3} / s and the efforts of 46.3 mbar placed in the open space behind the boiler room.

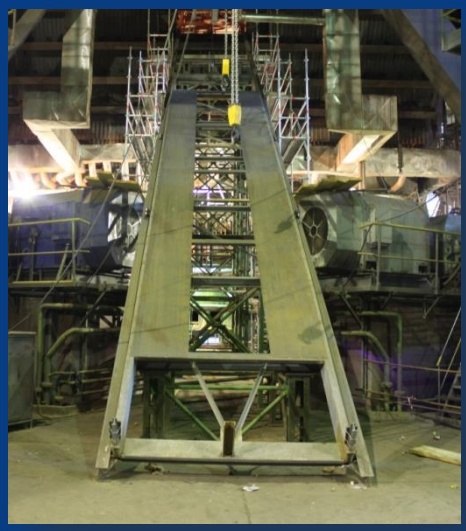
The ash from the flue gases is allocated through two parallel electro static precipitator sets. Flue gases then go to the common stack, in which each boiler has its own smoke pipe with the diameter of 8m. The stack is 280m high and represents the highest building in Serbia.

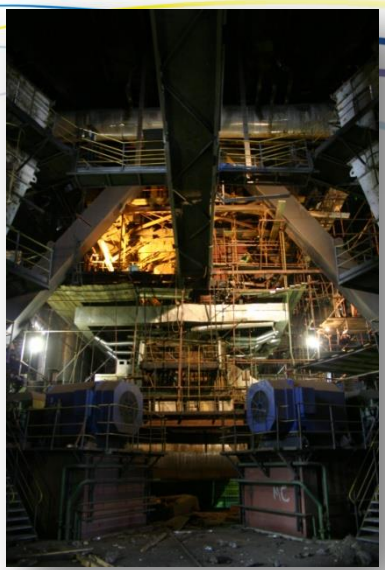


Phase 1 of revitalization of the unit B1 in 2012

Phase 1 of revitalization of the unit B1, made in 2012, had a goal to increase the reliability of unit operation, prolong the life of plants, improve energy efficiency, increase power and reduce negative impact on the environment.

This also included works on the boiler facility - evaporator replacement (from +72.5 m to 113m): = 300t, installation of additional EKOIa: = 680t, installation of a new feeder pipeline for additional EKOIa: = 43t, replacement of straight and bent pipe elements of the output and inlet unit of all heater devices, installation of steam soot blowers, replacement of pre-heater 1, MP2 and MP3 with hanging tubes associated with anti-abrasion protections, replacement of by-pass VP and safety valve and capital overhaul roster. The following works were also done: replacement of honeycomb Luv, repair of channels with associated valves, fan repair, overhaul of dosing and feeder, mills repair, slag remover repair, repair of equipment for the transport of ash and slag.





The boiler is equipped with two movable grilles for burning coal, with the capacity of 2x40 t/h. Above them four cameras for visual observation of burning coal on roster are installed. Slag from the slag remover, by belt conveyor system, transports to silos for slag. The ash of electrostatic precipitator is pneumatically transported to the ash silo. In the silo complex slag is again mixed in a mixer – mixing of fly ash, slag and water is in the ratio 1:1. Such a thick mixture is transported by pumps to the landfill ash.

For the stable operation of the unit, feed water boiler is provided by a feed water pump which is driven by a steam turbine of 23.9 MW. Two electric feed water pumps with the total capacity of 60% of the required water flow were used during the initial and final phase of the operation.

The fuel

TENT B uses Kolubara lignite as a fuel. The coal has the lower heating value of 5,000 to 9,000kJ/kg., with the average moisture content of 45-53% and 10-23% of ash. Daily consumption of the coal rates from 17,000 to 21,000 tons per each unit. From the entrance place of the mine to the thermal power plant, coal is transported by trains on railway with regular tracks. Transport is done with special wagons whose bottom can be opened (type ARBEL) while the wagons are moving. The whole traction system of and maneuvers of driving composition is electrified, and the time of effective unloading of the composition is from 20 to 40 minutes. The coal storage with a maximum capacity of 650,000 tons for both units, which enabled the operation of the units for more than 12 days without transportation, was built.

Coal is, after the unloading station, transported by two lines of conveyors and automatic sample of coal (on-line), leading to the boiler bunkers. The capacity of the conveyor line is 2,300 t/h, and for each unit eight boiler bunkers with individual capacity of 500 tons were built.

Fuel oil is used as an additional fuel, so in that sense, ramps for its unloading from rail and auto cistern were built. It is stored in two tanks with a capacity of 2x5,000m^3 from where they are shipped to the boiler.

Steam turbine

Live and inter heated steam produced in the boiler is brought to steam turbines.

Turbines are single axle, four housings, capacitor devices consisting of a single flow housing with high pressure, a housing of two-flows with medium pressure and two two-flows housings with low pressure. Subtraction steam for regenerative overheating of feed water and capacitor in four heater surfaces with low pressure, in the supply tank and two parallel heater surfaces with a high pressure are made on the turbine. Part of the steam is used to drive turbine of feed water pump.For the circulation of condensate two two-stage condensate pumps, working and backup, are provided. Between the two levels of the pumps, a part of condensate is brought through the system for condensate treatment. When the temperature of the Sava River is 12 °C condensing pressure of 0.042 bar is achieved, the nominal power of 620MW – B2 and 650MW - B1(after the first phase of revitalization).

Turbine facility is supplied by dual system of higher by-pass (by-pass HP) and low pressure (by-pass LP) as well as the equipment for reducing pressure and steam temperature in order to keep the boiler working condition in the condition of sudden changes in load, outage or start up of turbine and enable rapid switching of turbines.

Management and control system of the unit B1 is, after the revitalization in 2012, being done by DCS (Siemens teleperm system). The same system will also be implemented at the unit B2.

Generator and power plant

The generator is the- three- phase synchronic machine directly connected to the shaft of turbines. Generator power is 727.5 MVA. Cooling of the rotor generation is done with hydrogen, and cooling of the stator winding with demi water.

The link between the generator and block transformer of 725MVA, 21/400kV and a transformer with its own consumption of 60/35/35MVA, 21/6, 9kV is made by the armored tracks.

Control of the generator voltage is 5% in regard to nominal voltage.

Besides the transformer with its own consumption of units there is a transformer of general groups 60/35/35MVA, 220/6, 9kV for supplying consumers from the transmission line of 220kV. Transformers 6, 6 / 0,4 kV are three-phase ,dry, with a nominal power of 630, 1,000 and 1,600kVA depending on the certain consumer.

The associated switchgear plant of 400 kV from whose 6 transmission lines of 400kV give connection to consumer centers is located at about 9 km from the thermal power plant, “Nikola Tesla” B.

Common plants

For cooling the turbine condensers and other personal needs we use the water from the Sava River. The two vertical coolant pumps with the capacity of 37,500m^3/h belong to each unit. Flow control is carried out by rotating the blades of qualifying round. The pumps are located in the pumping station, which is equipped with the plants for mechanical purification of water.

The water for the essential cycle is provided from plant of chemical water preparation-HPV where is purified chemically in three lines for full demineralization with the capacity of 3h100t/h. In order to ensure normal operation of the units three tanks of demi water were built, each having a volume of 1,500m^3. Work in the facilities for chemical treatment of water is automated. Raw water is provided from wells with the individual capacities of 50 t/h.

The auxiliary boiler room is envisaged for starting the unit in which three boilers are installed, each with the capacity of 65t/h and steam pressure 13bar.

The auxiliary boilers use the oil as a fuel and light fuel for starting.

The complex power plants have workers' premises, the laboratories, warehouses for spare parts and supplies, clothing and restaurant with a kitchen for TENT employees and contractors. Workshops and main warehouse are located along the main building of unit for enabling better communication between staff and equipment.

Ecological modernization and energy efficiency

The support for sustainable development and the creating of green industries is the essential goal of the Corporate Enterprise Thermal Power Plant “Nikola Tesla" ltd, and consequently of the power plant “Nikola Tesla" B as a branch of the Enterprise.

Program for the implementation of cleaner production set guidelines for ecological modernization and energy efficiency of TENT B production facilities. Extremely great attention is given to identify all adverse effects of the plant on the ecological system and to prevent potential air, water and soil pollution. For this reason we are taking the protection measures and projects are envisaged and the most adequate technical solutions concerning equipment and systems which mitigate adverse impacts or maintain the legally allowed limits are carried out. We strive at the same time to increase the productivity and efficiency of the plant.

The reconstruction of electrostatic precipitators, dust emissions was brought under the legally permissible limit of 50mg/Nm^3.

The plumbing for potable water supply for the surrounding settlements is built. Chemically active water from the power plant process is neutralized in the specific neutralization pits and can be used for the ash transport only after checking the dilution several times.

The measurement of all parameters and the impact of power plants on the environment are carried out regularly, compile the appropriate reports and overview of conditions. We promptly react to all phenomena that could be environmentally harmful. Installing systems for continuous measurement of gas emissions in the stack (CEMS) daily amount of emitting materials and gases in the atmosphere is controlled.

The ash dump is built on the ground where a very thick layer of clay was established by research, and drainage systems are installed around the landfill in order to prevent pollution of ground water by leachate materials from ash.

The whole plants circle is covered by grass and greened so that it fits into the surrounding natural vegetation.

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Cleaner Production

UNIDO

This is to confirm that

Privredno Društvo Termoelektrane "Nikola Tesla" d.o.o. Obrenovac
TE "Nikola Tesla" B

has successfully participated in the

UNIDO Cleaner Production Companies Programme 2011

in Serbia

Petra Schwager
Project Manager, UNIDO

The system of exclusion, transport and disposal of ash and slag

One of the highest environmental problems was solved by the construction of a new ash disposal system and the quality of life in the region was significantly improved.

By replacing of the old technology ”the rare mixture" that included the transport of ash mixtures (2,000.000t per year) and water (20,000.000t) in the ratio 1:10 and applying of new technologies, ”the thick mixture" in which the ashes (2,000. 000t per year) are mixed with water (2,000.000t per year) in the ratio 1:1, scattering of the ashes from landfill with the surface of 400 hectares is prevented, and the amount of water for transportation is ten times reduced. The pollution of surface water is eliminated too.

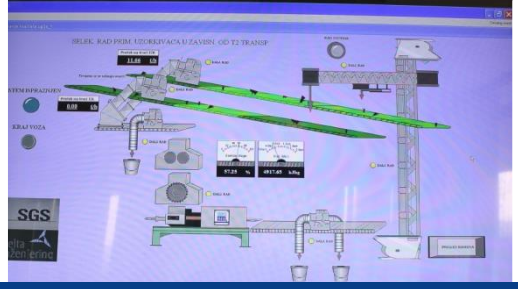
The new system of TENT B ash disposal consists of:

-System for pneumatic ash transport and mechanical slag transport,

-Silos for temporary ash and slag storage

-Stations for preparing slurry ash and slag and transport to ash landfill.

Within the ecological modernization of thermal power plant " Nikola Tesla” B the construction of plant for waste water treatment is planned, which is largely financed by the European Union (IPA funds). The construction of a flue gas desulphurization which will solve the problem of increased emissions of sulfur compounds into the atmosphere is also planned. Within the second phase of the revitalization of the units, by reconstruction of burner coal, the problem of increased emissions of nitrogen compounds will be solved too.


Energy Efficiency

Thermal power plants Nikola Tesla" B , within its development activities, gives a special attention to the maintenance of plants, modernization of existing producing capacity in order to increase energy efficiency, reliability and availability of power plant equipment.

By revitalization of Unit B1 (first phase)in 2012 and the installation of additional EKOI reached higher efficiency of the unit for around 1.5%, and in this way about 10 megawatts of green are given. The overall increase of capacity is achieved 30MW.

New (on-line) system of continuous measure of the quality and quantity of coal delivered by trains at TENT B enabled the determination of the degree of usefulness of units in gross, on a daily, monthly, quarterly and annually basis. An online system provides an opportunity for further homogenization for optimal driving of units without the use of fuel oil to support fire.

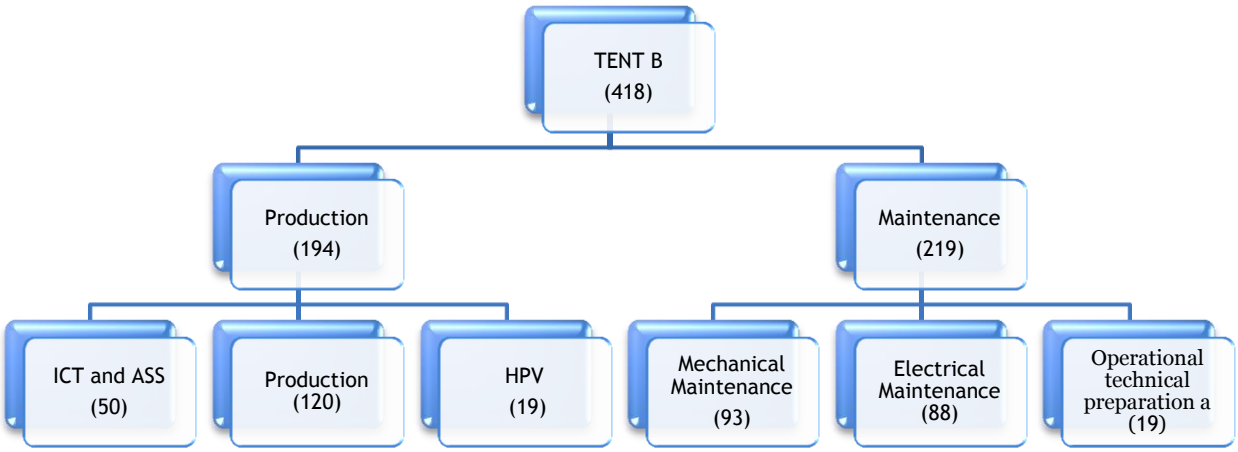
Work on-line coal analyzers are based on elemental analysis, measuring the coal density, measuring the moisture content of the coal and presenting results. The lower calorific value of coal, moisture, sulfur and ash content and the total amount of coal delivered from the trains are stated. The on-line system works on the principle of prompt gamma neutron activation (PGNAA - Prompt Gamma Neutron Activation Analysis) in order to determine the content of individual elements in coal.

In order to increase energy efficiency, additional activities of utilization of the waste heat of cooling water from the cooling plant system at TENT B (building ponds, greenhouses, ..)are planned.

Mechanical energy of cooling water, on the flow into the Sava River due to the height difference, can be utilized for the mini hydro power of 1.5 MW.

Measures of continuous plant maintenance include improving of sealing boiler facility and capacitor, improving of the thermal insulation and reduction of losses in the water-vapor system.

Organizational schedule and qualification structure of employees



*Work systematization

Level of educational attainment	Percentage
I	1,6
II	1,1
III	11,1
IV	58,5
V	12,4
VI	4,5
VII	10,8

Data on December, 31, 2012.

Integrated management system

Thermal Power Plant "Nikola Tesla" Ltd., thus TENT B as a part of a corporate enterprise, the first in the "Electric Power Industry of Serbia" established and implemented the three international standards: ISO 9001, ISO 14001 and OHSAS 18001.

Certificate of quality management system (QMS) according to requirements of ISO 9001 standard, issued in 2005, in 2008 and 2011 after recertification test is confirmed and sustained its importance.

Certificate for environmental management (EMS) according to requirement of ISO 14001:2004, is obtained 2008. After the recertification test in 2011, its validity is confirmed and extended. The establishment of this system and the activities that TENT has undertaken for preservation of the environment, shows that it is committed to reduction of negative environmental impacts and compliance with all relevant legislation in this area.

Certification for occupational health and safety (OHSAS), according to OHSAS 18001:2007, is obtained in July 2010.

All three systems were unified into an integrated management system.

Original equipment producers

COAL TRANSPORTATION
Wagon Manufacturer Factory Kraljevo
Load coupled units 58T
Traction locomotive JZ
Manufacturer R.Koncar Zagreb
Power 5420kW

COAL DELIVERY
Manufacturer 14 OCTOBER Krusevac
DELATTRE LEVIVIER France
Unloading capacity 2x2300t/h
The storage capacity of taking 2700t/h
Project storage capacity 420000t
Electric motor slant belt
SEVER 630kW

COAL MILLS
Type EVT N 400.42 fan
Manufacturer MINEL Belgrade and EVT Germany
Capacity 8X144t/h
SEVER 2000kW electric motor

FUEL OIL PLANT
Designer and manufacturer
ENERGOPROJEKT and MINEL TERMOREMONT
Fuel oil burners 16x3 , 5 t/h
Reserves of fuel oil 2x5000t

AUXILIARY BOILER ROOM
Manufacturer MINEL Belgrade
Capacity 3x65t/h
Steam pressure 16 bar

CHEMICAL WATER TREATMENT
Manufacturer CHRIST Switzerland and MIN Nis
Capacity demineralization 3x100m^3/h
Condensate refining capacity 600m^3/h
Reserve demi water 3x1500m ^{3}

FEED WATER PUMP
Turbo
Type MPT period 43 five-point
Manufacturer CCM SULZER France
Capacity of 2260t/h
Effort 291.7 bar
Effort pre pump 15 bar
Power steam turbines BBC 23900kW

ELECTRICAL
Type HPT period 28-25
Manufacturer CCM SULZER France
Capacity 2x564t/h
Effort 249.0 bar
Gear NEYRTEC
Electric motors Sever 7000kW

STEAM BOILER
Type BB 1880
Manufacturer RAFAKO Poland
engineering EVT Germany
Steam production 1880t/h
live steam pressure 186.5 bar
Interheated vapor pressure 42 bar
Live Air / vapor interheated 540/540°C
Feed water temperature 259.2°C
Forced flow system
Oil consumption 872t (6000 kJ / kg)
Steel construction MOSTOSTAL Poland and MIN Nis

FRESH AIR FANS
Type KKK n 33e 6 axial
Manufacturer KKK Germany and MINEL Belgrade
Capacity 2x542m^3/s
Effort 62,5 mbar
Electric motor Sever 4100kW

FAN FLUE GASES
Type KKK n e 42 6
Manufacturer KKK Germany and MINEL Belgrade
Capacity 2x824 m^3/s
Effort 46,3 mbar
SEVER 5200kW electric motor

ELEKTROSTATIC PRECIPITATOR
Manufacturer LURGI France and MIN Nis
Number in block 2 of 4-zone
Reconstruction 2011/2012.
Design, delivery and installation
B2 - RAFAKO , Poland
B1 - HAMON , ZK TERMOCHEM
Emissions of particulate matter less than 50mg/Nm^3

TRANSPORT AND STORAGE OF ASH AND SLAG
Manufacturer dredge pumps Humboldt WEDAG Germany
Capacity of 1830 m^3/h
Effort of 35.95 m VS
Electric motors 920 KW GANZ
Other equipment OBV Hungary
Reconstruction in 2010:
Design , supply and construction equipment - , Energoinvest , Sarajevo and EWB , Hungary
Capacity pneumatic transport of ash by block – 256t/h , the length of conveyor lines - about 700m
Capacity of belt conveyor for the slag - 80t/h
Capacity of a fly ash silo - 4300m^3
Capacity of silos for clay - 800m^3
Built-in three lines for preparation and transportation of thickened mixture to ash .
Line capacity of slurry - 315 - 355m3/h

STEAM LINES INTER HEATING AND FRESH
Manufacturer Main steam NORDON France
The largest diameter Ø 602x61 , material H 20 CrMoV 12.1
Manufacturer of steam pipeline Chemar Poland
The largest diameter Ø 1016x56 , material 14 MoV63

STEAM TURBINE
type D4 4:56 Producer BBC Switzerland and ALSTHOM France
Rated Power 620MW
Live steam pressure 177.5 bar
Temperature live /inter heated pressure 535/535 °C
Number of steam deduction 7
Length of blades 1000mm
Condensing pressure 0,042 bar

REGENERATIVE CONDENSER HEAT
Manufacturer ALSTHOM France and MIN Nis
condenser - cooling area of 18250m^3

DRAIN PUMP
manufacturer CCM SULZER France
Capacity 2x1341t / h
Effort 41.4 bar
Electric motors Sever 2350kW

COOLING WATER PUMP
Type Vi 4,5 / 175 vertical coil
Manufacturer LITOSTROJ Ljubljana
Capacity 2x37500m^3/h
Effort 15.829mVS
Flow rate - turning blades pre wheels
Hydro mechanical equipment of pumping station
BEAUDREY France and GOSA Pipelines and cooling water GOSA
Smederevska Palanka and Nis MIN
Electric motor SEVER 2200kW

GENERATOR
Type BBC 23S WT - 106.AF3
Manufacturer BBC Switzerland
Rated power 727.5 MVA
Rated voltage 21kV
Impulse – thyristor
Cooling water- hydrogen
Reactance 24%

TRANSFORMERS
Type three- phase, with two winding in oil
Manufacturer CEM France and RADE KONCAR Zagreb
Rated Power 725MVA
Transmission ratio 21/410kV

TRANSFORMERS OF OWN CONSUMPTION
Type three-phase control, three-coiled in oil
Manufacturer MINEL Belgrade
Nominal power 60/35/35MVA

SWITCHYARD "MLADOST " 400kV - EMS
Manufacturer MINEL Belgrade and RADE KONCAR Zagreb
The two main system and one additional bus bar .
System with 18 fields and short-circuit power 29100MVA

220Kv SWITCHYARD THE POWER PLANT - EMS
Manufacturer MINEL Belgrade and Zagreb DO KONCAR
A system bus
The 4 fields and short-circuit power 170000MVA

PLANT OF OWN CONSUMPTION
Manufacturer MINEL Belgrade and MERLIN GERIN France
Cells 6,6 kV for power supply 3150 and 1250A
Transformers 6,6 / 0,4 kV of 630 , 1000 and 1600kVA
Plant 0.4kV modular type for power supply to 3150A

MEASUREMENT , CONTROL AND MANAGEMENT (B2)
Start turbines Turbomat BBC, Switzerland
Turbine Rurbotrol control 4 BBC , Switzerland
Boiler control Sulzer , Switzerland
Management DECONTIC, BBC Switzerland
Data processing Data- logger
SESA / Sintra , France

RECONSTRUCTION IN 2012
DCS and equipment in the field B1
DCS - Siemens, Switzerland
Impulse- Institute " Nikola Tesla ", Belgrade
Generator breaker - ABB
By-pass VP - CCI Sulzer, Switzerland

SYSTEM FOR CONTINUOUS MEASUREMENT OF QUALITY AND QUANTITY OF COAL
Design, delivery and installation –
SGS Belgrade

CHIMNEY
Reinforced concrete structure with four flue pipes
Contractor VATROSTALNA Zenica
Diameter of base / top 31/25 m
Height 280m
Diameter of the flue pipe 8m

PARTICIPANTS IN THE CONSTRUCTION

In building plant "Nikola Tesla B " participated in a number of companies from the former Yugoslavia and international design, building, manufacturing assembly, electricity-sized enterprises and scientific institutions.

PROJECT ORGANIZATION
ALSTHOM France
Energoprojekt Poland
Energoprojekt Belgrade
DEPARTMENT OF DESIGN ZJZ Belgrade

SUPPLIER AND IMPORTER
ELEKTRIM Poland
Transelektro Hungary
JUGOELEKTRO Belgrade

THE CONTRACTOR
RAD Belgrade
Ivan Milutinovic Belgrade
PARTISAN PUT Belgrade
PLANUM Belgrade
BELGRADE Road Company, Belgrade

ARTISTS PREFABRICATED AND FINAL WORK
TERMOELEKTRO Belgrade
MINEL INSTALLATION Belgrade
UMEL Tuzla
GOSA Smederevska Palanka
MIN Nis
JADRAN Belgrade
TERMIKA Ljubljana
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