

POWER PLANT



Power Plant

4 GAS TURBINES

Manufacturer:	GENERAL ELECTRIC / THOMASSEN
TYPE:	MS 5001/N
Model:	“Nancy”
Number of axes:	1-axis
Nominal burner capacity:	12500 m ³ (n)
Inflammation:	Direct electric
Pressure ratio:	1 : 9



Power Plant - specification

On offer is our complete gas fired black start/peak load power station, consisting of 4 (four) GE Frame 5N Gas Turbine Sets. One gas turbine is composed of the following components:

- Gas turbine
- Generator
- Diesel Engine
- Main Gearbox
- Auxiliary Gearbox
- Speedtronic Mark II control System
- Exhaust plenum
- Air inlet filter house



A picture of one UNIT

Power Plant

The 4 (four) Units are currently installed parallel to each other at an elevation of approximately 3.5 meters above ground level of the power plant.

Photo of two Units, first floor

Photo taken from above the Units



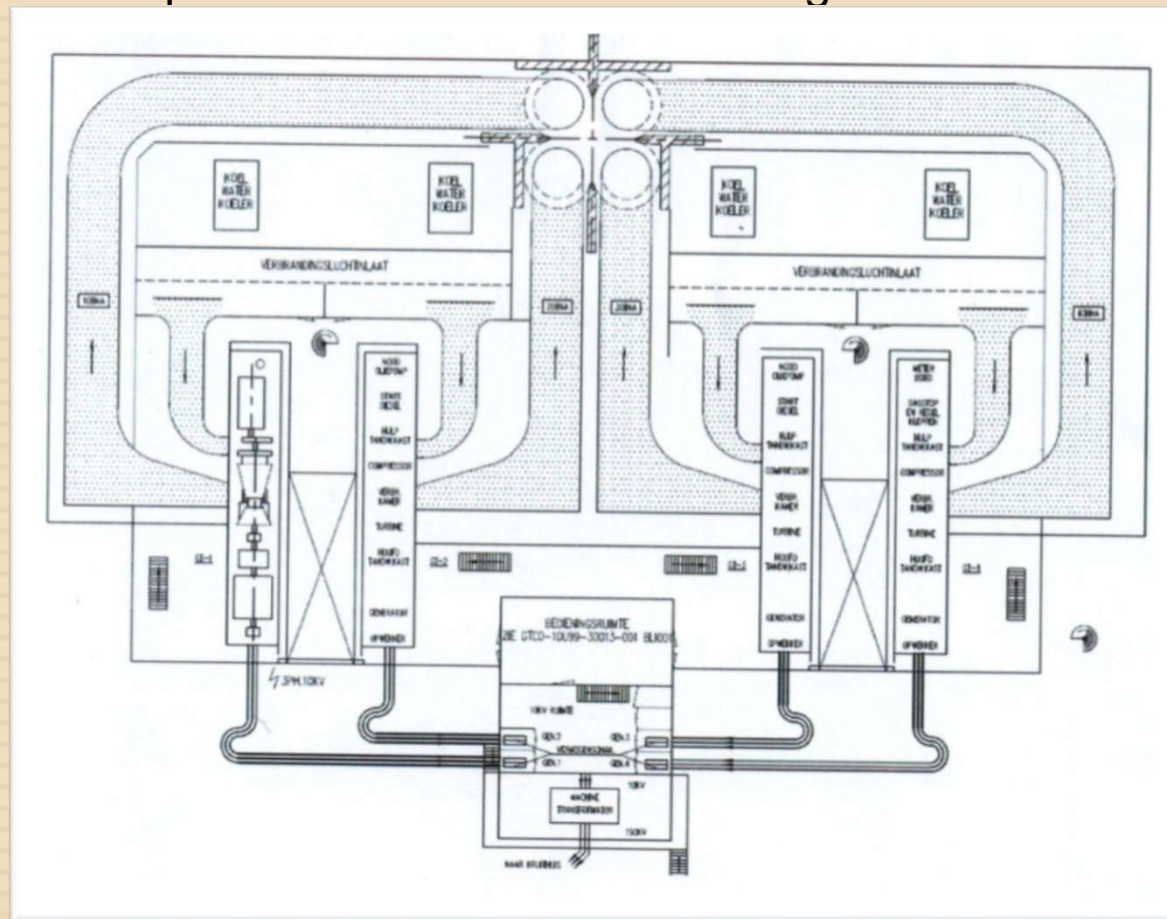
Power Plant

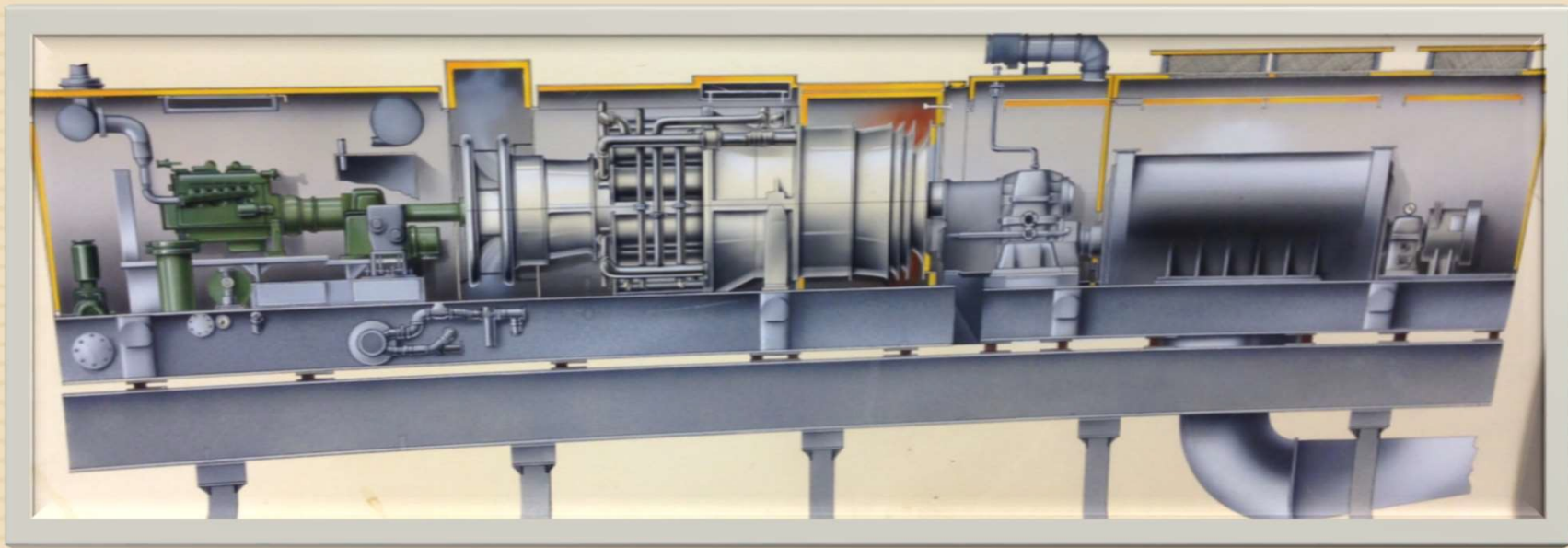
The 4 (four) Units are currently installed parallel to each other at an elevation of approximately 3.5 meters above ground level of the power plant.



Power Plant

A schematic overview of the whole plant is provided below giving an impression of how the Units are placed within the whole building.





Power Plant

Technical details of Unit 1 and Unit 2:

	UNIT1	UNIT 2
GASTURBINE		
Manufacturer	GENERAL ELECTRIC / THOMASSEN	GENERAL ELECTRIC / THOMASSEN
Type	M55001 / N	M55001 / N
Serial number	140145, GE 226129	140144, GE 226128
Model	NANCY	NANCY
Name plate rating	24 MW	24 MW
Compressor stages	17 stages (incl. IGV's)	17 stages (incl. IGV's)
Turbine stages	2 stages	2 stages
Exhaust gases	Direct to chimney	Direct to chimney
Compressor rate	1 : 9	1 : 9
Speed	5121 rpm.	5121 rpm.
Control system	Speedtronic (Mark II) updated to DCS	Speedtronic (Mark II) updated to DCS
Fuel	Natural Gas	Natural Gas
GENERATOR		
Manufacturer	SMIT SLIKKEVEER (BRUSH HMA)	SMIT SLIKKEVEER (BRUSH HMA)
Type	DTG 175/200/80	DTG 175/200/80
Serial number	NO: 1 – 1885 – 183	NO: 1 – 1885 – 184
Name plate rating	30.000 kVA	30.000 kVA
Rate capacity	10,5 kV/1652 A	10,5 kV/1652 A
Frequentie	50 HZ	50 HZ
Speed	3000 rpm.	3000 rpm.
DIESEL ENGINE		
Manufacturer	DETROIT DIESEL ALLISON DIV. G.M.C.	DETROIT DIESEL ALLISON DIV. G.M.C.
Model	71237000	71237000
Power	500 PK	500 PK
Speed	2300 rpm	2300 rpm
Fuel	Gasoline	Gasoline
MAIN GEARBOX		
Manufacturer	ALCATEL – GRAFFENSTADEN	ALCATEL – GRAFFENSTADEN
Type	R – VF – 63	R – VF – 63
Speed reduction	5120 / 3000 rpm	5120 / 3000 rpm
P max / nominal	30000 / 27000 kW	30000 / 27000 kW
AUXILIARY GEARBOX		
Manufacturer	ALCATEL – GRAFFENSTADEN	ALCATEL – GRAFFENSTADEN
Type	A500 BG 2 BM	A500 BG 2 BM
Speed reduction	5120 / 3582,6 / 1684,2 / 1445 RPM.	5120 / 3582,6 / 1684,2 / 1445 RPM.
Connected with	Main lubrication oil pump, cooling water pump, fuel oil pump.	Main lubrication oil pump, cooling water pump, fuel oil pump.
Total Operating Hours (End of 2010)	6119	5807
Operating Hours since last major overhaul (End of 2010)	2506	2557
Total Starts (adjusted for trips with factor 8/trip) (End of 2010)	2616	2539
Starts since last Major Overhaul (adjusted for trips with factor 8/trip) (End of 2010)	363	454
Last Major Overhaul in:	2002	2002
Last inspection	Boroscope inspection in 2010	2009 Comb.insp., 2010 Boroscope insp.

Technical details of Unit 3 and Unit 4:

	UNIT3	UNIT 4
GASTURBINE		
Manufacturer	GENERAL ELECTRIC / THOMASSEN	GENERAL ELECTRIC / THOMASSEN
Type	M55001 / N	M55001 / N
Serial number	140131, GE 225905	140130, GE 225904
Model	NANCY	NANCY
Name plate rating	24 MW	24 MW
Compressor stages	17 stages (incl. IGV's)	17 stages (incl. IGV's)
Turbine stages	2 stages	2 stages
Exhaust gases	Direct to chimney	Direct to chimney
Compressor rate	1 : 9	1 : 9
Speed	5121 rpm.	5121 rpm.
Control system	Speedtronic (Mark II) updated to DCS	Speedtronic (Mark II) updated to DCS
Fuel	Natural Gas	Natural Gas
GENERATOR		
Manufacturer	SMIT SLIKKEVEER (BRUSH HMA)	SMIT SLIKKEVEER (BRUSH HMA)
Type	DTG 175/200/80	DTG 175/200/80
Serial number	NO: 1 – 1885 – 181	NO: 1 – 1885 – 182
Name plate rating	30.000 kVA	30.000 kVA
Rate capacity	10,5 kV/1652 A	10,5 kV/1652 A
Frequentie	50 HZ	50 HZ
Speed	3000 rpm.	3000 rpm.
DIESEL ENGINE		
Manufacturer	DETROIT DIESEL ALLISON DIV. G.M.C.	DETROIT DIESEL ALLISON DIV. G.M.C.
Model	71237000	71237000
Power	500 PK	500 PK
Speed	2300 rpm	2300 rpm
Fuel	Gasoline	Gasoline
MAIN GEARBOX		
Manufacturer	ALCATEL – GRAFFENSTADEN	ALCATEL – GRAFFENSTADEN
Type	R – VF – 63	R – VF – 63
Speed reduction	5120 / 3000 rpm	5120 / 3000 rpm
P max / nominal	30000 / 27000 kW	30000 / 27000 kW
AUXILIARY GEARBOX		
Manufacturer	ALCATEL – GRAFFENSTADEN	ALCATEL – GRAFFENSTADEN
Type	A500 BG 2 BM	A500 BG 2 BM
Speed reduction	5120 / 3582,6 / 1684,2 / 1445 RPM.	5120 / 3582,6 / 1684,2 / 1445 RPM.
Connected with	Main lubrication oil pump, cooling water pump, fuel oil pump.	Main lubrication oil pump, cooling water pump, fuel oil pump.
Operating Hours since last major overhaul	1774	2812
Total Starts (adjusted for trips with factor 8/trip) (End of 2010)	2698	3181
Starts since last Major Overhaul (adjusted for trips with factor 8/trip) (End of 2010)	337	570
Last Major Overhaul in:	2004	1999
Last inspection	Boroscope inspection in 2010	2006 Comb.insp., 2010 Boroscope insp.



General remarks

Technical remarks:

- The machines have been mainly deployed for “black-starts” which explains the relatively high ratio of number of starts over number of operating hours;
- The Units can be controlled individually. Control system needs to be connected to a regular PC with monitor and software;

Terms and conditions:

- Price for 4 Units: on request
- Unit: Unit is defined as described in section “Specification of Offering”
- On offer: 4 Units
- Inspection while in operation: Between July and November 2011
- Freight: Buyer is to arrange pickup and transportation from Site location
- Site location: EU
- Warranty: As is / Where is
- Dismantling & transport: Method of dismantling and transportation to be determined and executed by the Buyer;
The cost of such activities will be incurred by the Buyer;

Power Plant

Inside power plant



Power Plant

Inside power plant



Outside power plant

