
Addendum # 11



Rolls-Royce

PERFORMANCE

Section B – Technical

B-01 – Performance Data



Inlet Losses: 101.16 mmH₂O
Exhaust Losses: 101.6 mmH₂O

87.928% Methane (CH₄)
4.895% Ethane (C₂H₆)
1.353% Propane (C₃H₈)
0.476% n-Butane (C₄H₁₀n)
0.143% n-Pentane (C₅H₁₂n)
0.088% Hexane (C₆H₁₄)
4.028% Nitrogen (N₂)
1.089% Carbon Dioxide (CO₂)

Fuel temperature of 40°C (design temperature of 50°C) will be adequate provided water or hydrocarbon dew points do not exceed 2°C at 35 bara. Depending on details of higher hydrocarbon and water content, this temperature may need to increase in order to

		With Water Injection for NOx Control						Without Water Injection for NOx Control					
Case		1	2	3	4	5 (Design)	6	1	2	3	4	5 (Design)	6
Altitude	m	0	0	0	0	0	0	0	0	0	0	0	0
Pressure	kPa	101.325	101.325	101.325	101.325	101.325	101.325	101.325	101.325	101.325	101.325	101.325	101.325
Temperature	C	15	20	25	30	35	40	15	20	25	30	35	40
Relative Humidity	%	80	80	80	80	80	80	80	80	80	80	80	80
Performance													
Nominal Gross Output Power	kW	58000	55792	52298	48958	45906	43115	51635	49370	46985	44503	42360	40368
Nominal Gross Output Heat Rate	kJ/kW.hr	8933	8999	9085	9184	9294	9408	8614	8703	8808	8930	9054	9188
Nominal Gross Output Thermal Efficiency	%	40.3	40.01	39.62	39.2	38.73	38.26	41.79	41.36	40.87	40.31	39.76	39.18
Water Injection For NOx Control													
Water Temperature	C	15	15	15	15	15	15	15	15	15	15	15	15
Water Flow	kg/hr	13502	12802	11614	10401	9171	7894	0	0	0	0	0	0
Water:Fuel Ratio		1.177	1.152	1.104	1.045	0.971	0.879	0	0	0	0	0	0
Exhaust Emissions													
SO2 vppm (wet exhaust, measured exhaust O2)	vppm	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SO2 Mass Flow	kg/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CO2 Mass Flow	kg/hr	29587.9	28666.7	27129.6	25674.2	24360.7	23159.6	25420.3	24556.1	23649.7	22708.7	21912.8	21188.3
Nominal NOx													
Dry, Corrected to 15% O2	vppm	24.3	24.3	24.3	24.3	24.3	24.3	250.8	234.8	213.3	187.7	160.3	131.4
Dry, Measured O2	vppm	25	25.2	25.3	25.3	25.4	25.5	235	221.3	203	180.2	155.6	129.6
Mass Flow	kg/hr	22.1	21.4	20.3	19.3	18.3	17.4	194.6	176.1	154.2	130.5	107.8	85.7
Nominal CO													
Dry, Corrected to 15% O2	vppm	39.4	37.5	36.6	35.8	34.9	34.1	7	7	7	7	7	7
Dry, Measured O2	vppm	40.5	39	38	37.1	36.4	35.8	6.6	6.6	6.7	6.7	6.8	6.9
Mass Flow	kg/hr	21.8	20.2	18.6	17.2	16	14.9	3.4	3.2	3.1	3	2.9	2.8
Nominal UHC													
Dry, Corrected to 15% O2	vppm	15.8	15	14.7	14.3	14	13.6	N/A	N/A	N/A	N/A	N/A	N/A
Nominal VOC													
Dry, Corrected to 15% O2	vppm	3.2	3	2.9	2.9	2.8	2.7	N/A	N/A	N/A	N/A	N/A	N/A
Nominal Filterable Particulates													
Concentration	mg/Nm3	4.8	4.9	5.2	5.4	5.7	6	N/A	N/A	N/A	N/A	N/A	N/A
Flow	kg/hr	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3



Rolls-Royce

Nominal Performance for 60Hz

Preliminary Trent WLE performance
eTrent v7.1.2

Inlet Losses: 101.16 mmH2O
Exhaust Losses: 101.6 mmH2O

Diesel Fuel

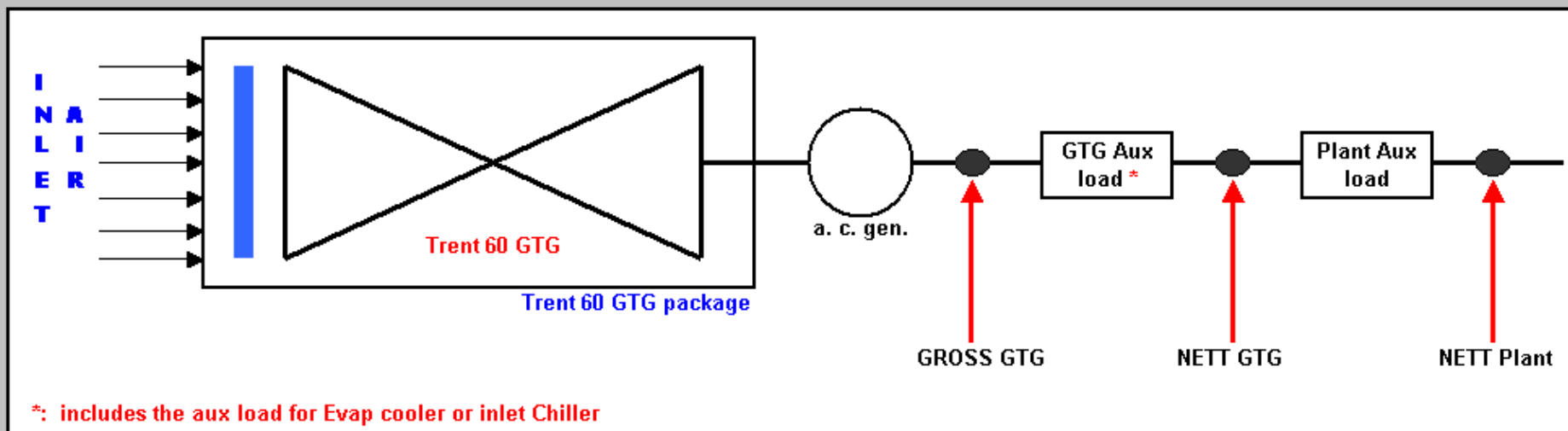
Carbon Atoms 12.9
Hydrogen Atoms 23.9
Cp 1.90 kJ/kg.K

		Liquid Fuel With Water Injection				
Case		1	2	3 4 (Design)	5 (Design)	
Altitude	m	0	0	0	0	0
Pressure	kPa	101.325	101.325	101.325	101.325	101.325
Temperature	C	15	25	30	35	40
Relative Humidity	%	80	80	80	80	80
Performance						
Nominal Gross Output Power	kW	58000	51845	48693	45470	42607
Nominal Gross Output Heat Rate	kJ/kW.hr	9018	9179	9276	9391	9508
Nominal Gross Output Thermal Efficiency	%	39.92	39.22	38.81	38.33	37.86
Water Injection For NOx Control						
Water Temperature	C	15	15	15	15	15
Water Flow	kg/hr	13629	11496	10274	8921	7540
Water:Fuel Ratio		1.11	1.029	0.969	0.89	0.793
Exhaust Emissions						
SO2 vppm (wet exhaust, measured exhaust O2)	vppm	N/A	N/A	N/A	N/A	N/A
SO2 Mass Flow	kg/hr	N/A	N/A	N/A	N/A	N/A
CO2 Mass Flow	kg/hr	39164.9	35630.7	33818.8	31970.9	30329
Nominal NOx						
Dry, Corrected to 15% O2	vppm	42	42	42	42	42
Dry, Measured O2	vppm	44.4	44.7	44.8	44.9	45.1
Mass Flow	kg/hr	39.5	36	34.2	32.4	30.8
Nominal CO						
Dry, Corrected to 15% O2	vppm	7	7	7	7	7
Dry, Measured O2	vppm	7.4	7.5	7.5	7.5	7.5
Mass Flow	kg/hr	4	3.6	3.5	3.3	3.1
Nominal UHC						
Dry, Corrected to 15% O2	vppm	1.4	1.4	1.4	1.4	1.4
Nominal VOC						
Dry, Corrected to 15% O2	vppm	0.7	0.7	0.7	0.7	0.7
Nominal Filterable Particulates						
Concentration	mg/Nm3	N/A	N/A	N/A	N/A	N/A
Flow	kg/hr	6.8	6.8	6.8	6.8	6.8

Liquid Fuel Without Water Injection					
1	2	3	4 5 (Design)	6	
0	0	0	0	0	0
101.325	101.325	101.325	101.325	101.325	101.325
15	20	25	30	35	40
80	80	80	80	80	80
49050	46554	44412	42132	39957	37872
8749	8858	8968	9095	9236	9395
41.15	40.64	40.14	39.58	38.98	38.32
15	15	15	15	15	15
0	0	0	0	0	0
0	0	0	0	0	0
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
32158.4	30899.2	29840.6	28707.8	27648.3	26651.4
351.3	325.7	296.3	260.8	221.8	180.7
332.7	310.7	285.1	252.9	217.5	180.1
270	240.6	211.6	179.4	147.1	115.8
7	7	7	7	7	7
6.6	6.7	6.7	6.8	6.9	7
3.3	3.2	3	2.9	2.9	2.7
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
6.8	6.8	6.8	6.8	6.8	6.8



Schematic diagram, explaining R-R's performance figures



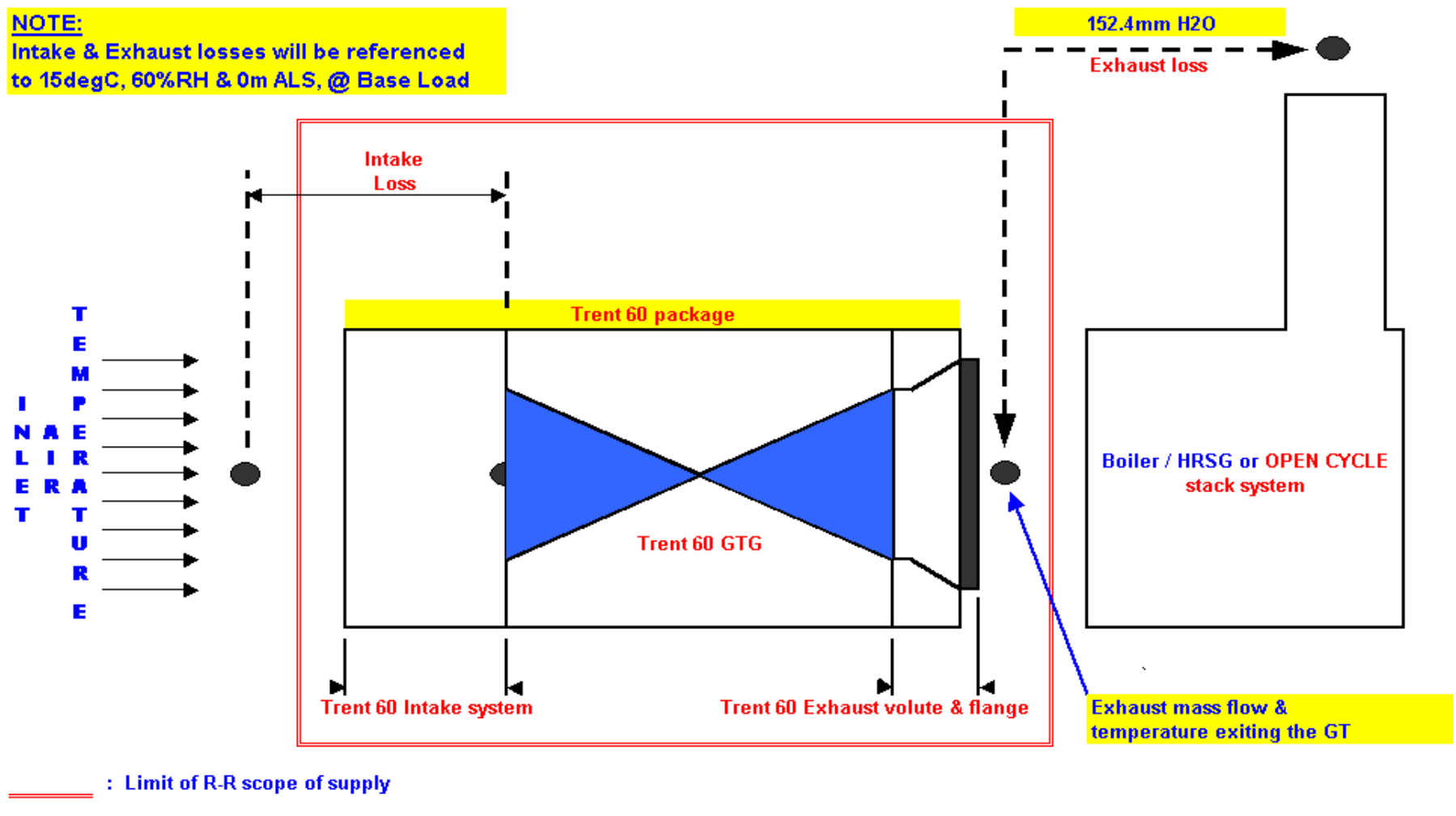
NOTE: The above data is presented FOR INFORMATION / GUIDANCE PURPOSES ONLY.



Schematic diagram - Defining the location of the Intake & Exhaust Losses

NOTE:

Intake & Exhaust losses will be referenced to 15degC, 60%RH & 0m ALS, @ Base Load



NOTE: The above data is presented FOR INFORMATION / GUIDANCE PURPOSES ONLY.



Section A - Scope of Work





TRENT 60 WLE POWER GENERATION PACKAGE

SCOPE OF SUPPLY

Section 1 – Base Scope of Supply

The base scope of supply for three (3) Trent 60 Dual Fuel WLE Power Generation Packages, designed in accordance with the specifications outlined in this contract. These units are available for fast delivery based on configurations that have already been manufactured or are in the final stages of completion and therefore are not identical. Areas where these units will differ are shown in this scope of supply document.

Gas Turbine

Trent 60 WLE

- Rolls-Royce Industrial Trent 60 Gas Turbine with water injection for emissions control.
- On engine mounted lubrication pump and start motor.
- Gas Turbine ignition system consisting of two on-engine ignitors and off-engine mounted exciter unit.
- On-engine mounted gas fuel injection manifolds.

AC Generator

- Two pole, Open Air Cooled (OAC) AC generator, 13.8kV, 3 phase, 60 Hz, 0.85 power factor in accordance with IEC 34-3 or ANSI C.50-14, fitted with class “F” insulation and designed for class “B” temperature rises with a brushless exciter.
- AC generator cooling system comprising air filter media, ducting and silencer and a generator shaft mounted cooling fan.
- Details regarding the line and neutral cubicles is as follows:
 - Both the line and neutral cubicle will be wired in the wye (star) type configuration
 - Each cubicle customer interface will have 7 conducting cables per phase; each cable will be 500 mm²
 - The cubicle cable penetration will be bottom entry
 - Current transformers - The line side cubicle has three sets of three current transformers; the neutral side cubicle has four sets of three current transformers. One of the transformers within each set can be used for protection of the main transformer that is used to export the power to the grid.
 - Voltage transformers – The line side has three sets of two voltage transformers
 - The line side cubicle is equipped with lightning protection and located on the same side as the engine removal.
 - The Neutral cubicle is located opposite the line side cubicle

Gas Turbine Module

Enclosure and Base

- Fabricated weatherproof painted carbon steel baseplate mounted enclosure to give an overall package acoustic performance of 85dB(A) avg. @ 1 m from the module at an elevation of 1.5 m and base for



housing the gas turbine, inlet plenum, fuel and oil systems, exhaust volute and enclosure ventilation air systems all mounted on a fabricated baseplate. All internal lighting (main and emergency), tubing, piping and cabling.

- Maintenance access and features, facilitating engine / module removal (sideways-removal from package). Anchor points and any special tooling are provided. Mechanical Handling Skid, standard walkways and ladders giving access to the inlet filter house are included.
- Fire protection and gas detection system, complete with thermal detectors and gas sensors for the gas turbine enclosure.
- Two -shot CO₂ extinguishing system, storage cylinders provided by EPC Contractor, manifold, fire dampers, pipework to nozzles within the gas turbine compartment, warning lamps, lock-offs, interlocks and high temperature cabling. A 100% discharge to extinguish the fire is followed by an additional 100% discharge to suppress re-ignition.
- Dry disc flexible coupling shaft including bolts. A separate shaft guard is not required as the coupling shaft is protected by the cone arrangement in the exhaust diffuser.

Combustion Air System

- Self-cleaning (pulsed) combustion air intake filter with first stage coalescer suitable for a non-coastal environment up to 40°C. R-R recommends accepting the option provided for modification of the intake filter as suggested in the pricing option to make the unit coastal environment compatible.
- Combustion air inlet silencer and ducting, with flexible joints to accommodate thermal movement.
- Mounted from the Gas Turbine module, including access door, ladder and internal lighting up to the silencer and filter units.
- Maintenance features such as anchor points and permanent tooling (internal filter element hoist).
- Radial air intake scroll with gas turbine compressor water wash supply rings.

Gas Turbine Exhaust System

- Gas turbine exhaust diffuser exhausting:

Unit 1: Left-hand horizontally to the package (when viewing from the Generator looking towards the GT Intake).

Unit 2: Left-hand horizontally to the package (when viewing from the Generator looking towards the GT Intake).

Unit 3: Vertical to the package.

Gas Turbine Enclosure Ventilation and Air Handling System

Enclosure Ventilation Intake System

- Air is drawn from the same filter house as the combustion air system. A designated section of the filter house is used to supply air exclusively for ventilation.
- The system includes ducting, silencing and fire dampers.

Enclosure Ventilation Exhaust System

- Three 50% duty AC electric motor driven belt driven induced draft ventilation fans that provide cooling air to allow the unit to operate up to 40°C.
- Ventilation air exhaust fire dampers, silencer, ducting and weather hood.

Gas Turbine Bleed Air

- Bleed air exhaust ducting and silencer.



Gas Turbine Internal Auxiliary Gearbox Cooling Air and Bearing Pressurization Air System

- Cooling air pipework.

Gas Turbine Synthetic Lube Oil System

- Gas turbine lube oil system including a stainless steel lube oil reservoir with thermostatically controlled electric heater, air/oil separator, water cooled mist eliminator, engine driven supply pumps, oil filter, simplex water cooled plate oil cooler, stainless steel pipework and fittings, associated valves and instrumentation.

Gas Turbine Hydraulic Synthetic Control Oil System

- Gas turbine hydraulic synthetic control oil system comprising of two 100% duty AC electric motor driven variable displacement pumps, stainless steel tank, oil mist separator, two 100% duty bladder type accumulators, oil filter, simplex water cooled plate oil cooler, stainless steel pipe work and fittings, associated valves and instrumentation.

Gas Turbine Fuel System

- Onskid fuel gas supply system, comprising of metering valves, high speed shutoff valves, gas fuel manifolds, stainless steel pipe work and fittings, associated valves and instrumentation.

AC Generator Module

Enclosure and Base

- Fabricated weatherproof painted carbon steel baseplate mounted enclosure to give an overall package acoustic performance of 85dB(A) avg. @ 1 m from the module at an elevation of 1.5 m and base for housing the AC generator, cooling air system, exciter and line and neutral cubicles all mounted on a fabricated baseplate.
- All internal lighting (main and emergency), maintenance power points, tubing, piping and cabling.

AC Generator Mineral Lube Oil System

- Lube oil system comprising one (1) shaft driven oil pump, one (1) AC electric motor driven auxiliary oil pump, one (1) AC electric motor driven jacking oil pump and one (1) DC electric motor driven emergency lube oil pump for run down. Oil filters, carbon steel oil reservoir with mist eliminator, vent and thermostatically controlled electric heater, associated pipework (stainless steel downstream of filters/ carbon steel upstream), fittings, valves and instrumentation. Depending on the generator selected, the system is base mounted or is mounted on a freestanding skid to be located adjacent to the gas turbine module.
- Mineral Lube Oil (MLO) module is comprised of an air blast cooling type for unit 1 and 2 and plate and frame cooling type for unit 3. The MLO skid cooling is suitable for ambient air temperature no greater than 40 deg C.

Water Wash System

- One mobile gas turbine compressor cleaning system, suitable for unfired washing, is supplied per site. Attachment points for the water wash system are externally located on the outside of the gas turbine module and on the wash cart.

Liquid Fuel System

- High pressure liquid fuel forwarding system comprising of AC electric motor driven fixed pump, simplex filter, stainless steel pipe work and fitting, and associated valves and instrumentation. This system is freestanding skid to be located adjacent to the gas turbine module.



- Onskid fuel system including metering valves, high speed shutoff valves, stain less steel pipe work and fittings, associated valves and instrumentation. The system is on the GT baseplate inside the enclosure.

Water Injection System

- Water injection system comprising three (3) x 33% AC electric motor driven fixed displacement, bent axis, axial piston pumps, stainless steel pipework and fittings, associated simplex filters, valves and instrumentation. The system is mounted on a freestanding skid to be located adjacent to the gas turbine module.

Control System

- Two (2) Human Machine Interface (HMI) (Primary and Backup) – To be mounted in the remote control room, shipped loose for installation in the operator's control room. All control systems are accessible remotely via the HMI system. The HMI will be based on Wonderware.
- The following Gas Turbine Control System is included in the Controls Scope of Supply:
 - Package Control System (PCS)
 - Engine Management System (EMS)
 - Fire and Gas Protection System
 - Vibration monitoring for all rotating equipment
 - Temperature monitoring of all rotating equipment
- AC Generator Control and Protection Panel (GCPP) comprising a two bay cubicle with automatic voltage regulator, AC generator metering and protective relay, automatic and manual synchronizing facility, with synchroscope and check synchronizer, free issued for installation by others.

Equipment Testing.

- Gas turbine factory test.
- AC Generator factory test
- Sub-system factory flushing and pressure testing.
- Auxiliary motor testing.
- Instrument and power cable insulation and continuity tests.
- Assembled package checkout test in the factory shop.

Documentation

- Three sets of Operating Manuals (CD format) in English.
- Three sets of Maintenance Manuals (CD format) in English.
- Project drawings and document list per SDRL found in Section B-05
- All equipment tags and language used on the equipment will be in the English Language.

Package Temperature Rating

- Minus 20 to plus 40 degrees C

Spare Parts

- Commissioning Spares for one unit is offered.



TRENT 60 WLE POWER GENERATION PACKAGE

TERMINATION POINTS

Interface Description	Terminal Points
Combustion Air	Inlet to intake filter house.
Compressed / Instrument Air	Compressed air connection at air intake filter house, gas turbine module edge and auxiliary skids The outlet from the gas turbine exhaust transition piece.
Ventilation	Enclosure vent outlets.
Mountings	Locations on skid baseplates and all other structural members.
Fuel Gas	Inlet flange on side of gas turbine module and vent flange on the roof of the gas turbine module.
Liquid Fuel (where applicable)	Inlet and outlet return connections on liquid fuel forwarding skid and gas turbine module.
Water for Gas Turbine Injection	Inlet, outlet and return connections on water injection skid and gas turbine module.
Lubricants	Filling points at oil reservoirs. Drains connections at oil reservoirs.
Drains	Drains system connections on all modules as necessary.
Grounding	Grounding terminals on modules and auxiliary skids.
Control and Instrumentation	Serial link connection between HMI and gas turbine module mounted control panels. GCPP Terminal blocks in control panels and on-skid connections. At terminal inside the package Motor Control Center and Uninterruptible Power Supply, both supplied by others.
HV Electric Power (13.8) kV	Lineside terminals of AC generator. Neutral terminal of AC generator
Coolant	Inlet and outlet connections on gas turbine and AC generator modules.
Compressor Cleaning	Filling point of wash tanks.
Medium Voltage Electric Power 480V AC	At motor terminals inside of the package. Motors include, AC Generator lube oil oil pumps, gas turbine control oil pumps, starting motor, water injection pumps and enclosure ventilation fans.
Low Voltage Power	At connections on the gas turbine module, AC Generator module, CO ₂ extinguishant skid and auxiliary skids.



TRENT 60 POWER GENERATION PACKAGE

EXCLUSIONS

Rolls-Royce does not accept responsibility for items or aspects of equipment which are outside the Scope of Supply defined above. The following items are excluded from this proposal, unless offered as an option.

- Site earthing / grounding
- Lightning protection
- Compressed air supply and piping
- All auxiliary power supplies, batteries and charger / UPS
- All first fills
- All fuel supplies, fuel supply and treatment
- Water supply and treatment
- Installation, commissioning, site test labor
- Demolition and/or removal of any existing equipment, structures and concrete.
- Installation tooling
- Instrumentation for site Performance Testing
- Site facilities
 - Fire sprinklers or other fire protection devices which may be required by insurance regulations.
 - Motor Control Center
 - Battery Back Up System
- Switchgear
- Transformers (Auxiliary & Main)
- Control system housing, external to gas turbine package enclosure mounted equipment
- Enclosure Door Access Ladders / Platforms / Walkways / Stairways and Handrails.
- Enclosure Roof Access Ladders / Platforms / Walkways / Stairways and Handrails.
- Control System integration with existing DCS
- Black Start / Emergency GenSet
- Fiscal metering
- Site facilities
 - Operating and strategic spares
 - Civil engineering design, embedments and works
- Grout
- Erection of equipment
- Long Term Storage
- All interconnecting pipework and cabling, beyond termination points, including:
 - All wiring to and from skids
 - Piping between externally mounted water forwarding skid and engine baseplate.
- Local Lighting
 - Stack Lighting, Grounding Protection System, emissions sampling points and CEMS
- Transportation beyond location specified in Base Scope of Supply.
- Unloading at site
- Taxes
 - Positive Material Identification (PMI) requirements and Third Party Certification.
 - Any and all permits or special clearances required by any government agency. This includes air pollution permits as well as Local building permits, construction permits, etc.
 - Modification required for coastal environment installation



- The Equipment is produced to internationally recognized codes and standards.
- If the location of the delivered Equipment is subject to any special or local codes, which are in conflict with these international standards, then Customer shall obtain, with the reasonable assistance of RR, waivers from the relevant authorities to permit the use of the Equipment as supplied. Where such waiver cannot be obtained and it is practicable to modify the Equipment to achieve compliance, then RR shall be granted the appropriate extension of time and variation in price, in order to execute the modifications.



TRENT 60 POWER GENERATION PACKAGE

CODES AND STANDARDS

The gas turbine, its immediate accessories and the driven equipment are produced to internationally recognized codes and standards. If the location of the delivered Plant is subject to any special, national or local codes which are in conflict with these international standards then Customer shall obtain, with the reasonable assistance of the Rolls-Royce Power Engineering plc, waivers from the relevant authorities to permit the use of the plant as supplied. Where such waiver cannot be obtained and it is practicable to modify the plant to achieve compliance then the Customer shall grant the appropriate extension of time and variation in price in order to execute the modifications

The following represents the list of Codes and Standards to which the Rolls-Royce has been designed the package in accordance with:

- 98/37/EC The Supply of Machinery (Safety) Regulations
- 97/23/EC Pressure Equipment Directive (PED)
- 94/9/EC ATEX Directive (Electrical/Mechanical)
- 89/336/EEC The Electromagnetic Compatibility Regulations
- 73/23/EEC Low Voltage Equipment
- 93/465/EEC Rules for CE Marking
- ASME VIII Div 1 U-Stamped Pressure Vessel
- ASME B31.3 and BS EN 13480 Process Piping
- ASME B16.5 Pipe Flanges and Fittings
- ASME V Non-Destructive Testing
- ASME 1X/BS EN 25817/PED Welding Piping/Weld Acceptance
- AWS D1.1/BS 5950 Structural Design Fabrication
- Material Traceability Certification to Section 3.1 of EN-10204
- Hazardous Area Classification North America Class 1 Div 2
- Institute of Petroleum Model Code of Safe Practice Part 15
- Fire Codes – NFPA 72 / NFPA 12
- UBC Zone 3 for Seismic load
- Statutory Regulation - R-R is not familiar with the requirements of the Regional and Local laws, regulations, codes and government injunction applicable to this project. R-R proven package is designed utilizing industry proven components and in accordance with API, IEC and other International Standards and therefore not able to confirm compliance with the local requirements.
- R-R standard package design meets wind speeds of 160 kph steady state and 200 kph gust.



Rolls-Royce

Section A –





TRENT 60 GENSET

SCHEDULE

BASE

SECTION 1 – Base Scope of Supply		
1.	Supply of Three (3) Trent 60 generating set packages consisting of Trent 60 WLE – Dual Fuel Turbines, Self-cleaning (pulsed) combustion air intake filter, exhaust volute orientated horizontally, Open air cooled (OAC) AC Alternator and auxiliaries per the Scope of Supply Section of the proposal.	
2.	Supply of Natural Gas Fuel and Distillate #2 Liquid Fuel Combustion System (Water Injected)	
3.	Supply of Water Injection System for NOx Control	
4.	Supply of motors, heaters, and lighting required for converting package from a 50Hz application to a 60Hz application package	
5.	All documentation, drawings, data, brochures, software, etc.	
6.	Installation and Commissioning spares	
7.	Delivery FAS from manufacturer's site to Houston port of Export	

FCA MANUFACTURER'S SITE DELIVERY SCHEDULE

The following dates are for delivery dates as applicable to this contract. Under no circumstance shall any delivery date be prior to the receipt of a mutually agreed letter of credit, as defined in section 3.8 of the main contract. Delivery dates for the package requiring additional field modification for 50Hz to 60 Hz conversion of GenSet package:

Item	Equipment Description	Delivery Lead Time	Delivery Unit 2	Delivery Unit 3
1	Main Gas Turbine Skid, Generator without Line Side and Neutral Cubicle	March 30, 2010	March 30, 2010	March 30, 2010
2	Gas Turbine	See Note 1	See Note 1	See Note 1
3	Line Side and Neutral cubicle	June 30, 2010	June 30, 2010	June 30, 2010
4	Equipment required to be installed for 50hz to 60 Hz Conversion	August 30, 2010 (See Note 2)	August 30, 2010 (See Note 2)	August 30, 2010 (See Note 2)



Note 1 – The gas turbine will be delivered in accordance with the customer's installation and commissioning schedule need date, not to exceed 60 days from Main Gas Turbine Skid Delivery.

Note 2 – Customer will be required to take into consideration appropriate field support labor and schedule to install equipment shipped to site directly for converting GenSet package from 50Hz to 60Hz application ready.

60 HERTZ CONVERSION OF PACKAGE (INSTALLATION AT FACORY OR POST FCA DELIVERY DEPENDING ON DELIVERY DATE OPTION SELECTED)

- 60 hertz compliant materials to be installed by Customer supplied. Scope of conversion to include, but not limited to,
 - Exchange of Air Filter Vent Fans
 - Exchange of Package Enclosure Lighting
 - Exchange of UCP Lighting
 - Exchange of Mineral Oil Heaters & Pump Motors
 - Exchange of GT Lube Oil Heaters & Pump Motors
 - Exchange of Liquid Fuel Forwarding Pump Motors
 - Exchange of Package Heaters
 - Exchange of F&G CO2 Skid Heaters
 - Exchange of GT Hydraulic Start Motor
- Craft Labor for installation of conversion material to be provided by Customer

TAXES

Pricing excludes sales, value added, property, use, commissions, and duties taxes.

PRIOR SALE

All delivery dates are subject to prior sales.

PROGRESS PAYMENTS

The pricing is based on the progress payment defined in the terms of payment below.

WARRANTY

Warranty of 12 Month s f following Fi rst Comm ercial Use or 18 Month s from the date of Delivery is of fered, whichever occurs first.



SCOPE OF SUPPLY

This proposal consists of and is limited to the equipment and services detailed in the Scope of Work Section of this proposal and commercial equipment terms summary herein.

Equipment being offered is suitable for operation in conditions outlined within the proposal and any equipment upgrades required for operation outside of these conditions are to the responsibility of the customer.

Optional equipment and services are in addition to the base offer.

CODES AND STANDARDS

The gas turbine, its immediate accessories and the driven equipment are produced to internationally recognized codes and standards. If the location of the delivered Plant is subject to any special, national or local codes which are in conflict with these international standards then Customer shall obtain, with the reasonable assistance of the Rolls-Royce Power Engineering plc, waivers from the relevant authorities to permit the use of the plant as supplied. Where such waiver cannot be obtained and it is practicable to modify the plant to achieve compliance then the Customer shall grant the appropriate extension of time and variation in price in order to execute the modifications.

TERMS OF PAYMENT

<u>Mile-stone</u>	<u>Milestone Description</u>	<u>Evidence of Completion</u>	<u>Unit 1,2 &3</u>	<u>Terms of Payment</u>
1	Equipment Contract Signature	Receipt of signed Equipment Contract	25% Contract Price	Payment 3 days from signature
2	Gas Turbine Package Skid available EXW	Notification of readiness to ship EXW Manufacturing Facility	35% Contract Value	Draw on LOC
3	AC Generator Skid available EXW	Notification of readiness to ship EXW Manufacturing Facility	35% Contract Value	Draw on LOC
4	Gas Turbine available EXW	Notification of readiness to ship EXW Manufacturing Facility	5% Contract Value	Draw on LOC

F. ~~Delivery~~ Delivery will require payment in full.

3. Pricing does not include sales, value added, personal property, title transfer and other such taxes, if applicable, nor does it include permit fees.
4. This proposal is offered subject to successful negotiation of a Contract between ~~ÖA~~, ~~ÖA~~ and Customer. In the event of conflict between the Proposal and the Contract, the Contract takes precedence.
5. Technical Direction of Installation and Commissioning is excluded.
6. Any spare parts sold under this contract will not delay any of the payments shown above.
7. ~~Delivery~~ Delivery will require one of the following:



Rolls-Royce

- An acceptable Confirmed and Irrevocable Letter of Credit from a leading world bank for the entire Contract Price minus any reservation and down payment prior to Contract Effectiveness. All costs for the Confirmed and Irrevocable Letter of Credit will be to the Customer. Any delays between execution of Confirmed and Irrevocable Letter of Credit shall extend the delivery date as determined by Rolls-Royce.

OR

- Payment of the full Contract Price prior to the contract becoming effective. If this option is chosen the terms and conditions attached to this proposal will have to be amended accordingly.