Bidder Questions Response

As the appointed Professional Services Provider, your contractual obligations encompass the complete design of generator systems, comprehensive supervision of the installation contractor's activities, continuous monitoring to ensure compliance with design specifications, and final verification that all installations meet the required standards. You will not undertake any physical installation work, as a separate contractor will be engaged specifically for construction and commissioning activities under your professional oversight.

Question 1: List of equipment - have we done due diligence in terms of preferred manufacturing equipment or must they do a holistic study?

Response: You are required to conduct a comprehensive holistic study as part of your professional services scope. No predetermined equipment preferences have been established by the client. Your responsibility includes evaluating current site conditions, assessing operational requirements, and recommending appropriate generator specifications that comply with carbon emission standards and incorporate fuel level sensing technology. Your proposal must demonstrate technical rationale for equipment selection based on performance criteria, reliability standards, and environmental compliance requirements.

Question 2: Process schedule, Engineering inspection on the SOW is unclear as there are no BOQ. Are we quoting on the same machines or can we provide our own ideas?

Response: You must utilize the Pricing Schedule provided within the tender documentation for fee submission. No Bill of Quantities exists because your scope involves design development and supervision services rather than equipment procurement or installation. You are expected to provide innovative engineering solutions and recommendations based on your professional assessment of site requirements. Your pricing should reflect the professional services components including design development, construction supervision, quality monitoring, and final verification activities.

Question 3: Disposal of the machines - must they include disposal of current machines in their proposal?

Response: Yes, your design scope must incorporate comprehensive planning for the disposal of existing generator equipment and associated infrastructure. The current generators and switchgear systems are obsolete and require complete removal. Your proposal should detail environmentally compliant disposal methodologies, waste management procedures, and any associated logistical considerations required for safe and responsible equipment decommissioning.

Question 4: What is the CIDB grading for this project?

Response: No CIDB grading requirements apply to this tender as it constitutes a Professional Services Provider contract rather than a construction contract.

Question 5: Request for opportunity to see the areas where generators are located

Response: No site visits will be arranged for this tender due to strict airside security restrictions. Access to airside and cargo areas will only be granted to the successful bidder after contract award. Relevant drawings have been attached to this bid to serve as the official reference. Bidders are required to rely solely on these attached layout documents for preparing their bids. Your design scope must still include comprehensive site surveys and documentation development as part of your professional services once full access is permitted post-award.

Question 6: Controls for these generators - are they locally controlled or centrally controlled?

Response: You are required to provide professional recommendations regarding the most appropriate control system architecture, based on operational requirements and technical considerations. While centralized control systems are preferred where technically feasible, your design should evaluate both local and central control options with particular attention to synchronization requirements, load management capabilities, and integration with existing electrical infrastructure. Even where a decentralized configuration may be technically viable, the system should ultimately be centralized through the application of a remote monitoring and control platform. Your proposal must therefore demonstrate the technical rationale for the recommended control strategy, clearly outlining how central oversight via remote monitoring will ensure operational reliability, efficiency, and scalability.

Question 7: What are the installation times at the airport - working hours on airside, day or night?

Response: Installation activities will be managed by the appointed installation contractor under your supervision, with airside operations typically restricted to night shifts to minimize disruption to flight operations. Specifically, work will be carried out after the last flight, within the operational window of 23h00 to 03h00. Your design must accommodate these constraints, including limited access windows, security clearance requirements, and specialized safety protocols. While you will not directly manage these logistics, your design specifications should demonstrate awareness of these strict operational limitations and ensure constructability within the prescribed timeframes.

Question 8: Switchgear controls required?

Response: Complete new switchgear and synchronization panel systems are required for this installation. The existing switchgear infrastructure is obsolete and cannot be integrated with the new generator systems. While new switchgear installations are being undertaken under a separate project, your design scope should still encompass modern switchgear configurations, protective relaying systems, synchronization controls, and load-sharing arrangements appropriate for the generator capacities specified in your technical proposal. To address potential interface requirements or unforeseen exclusions, a provisional sum or contingency allowance should be included within your proposal.

Question 9: Are we required to replace existing tanks?

Response: Yes, complete fuel system replacement is required as part of your design scope. This includes new underground bulk storage tanks with appropriate bund wall containment, correctly sized day tanks for immediate generator supply, modern fuel management systems with remote monitoring capabilities, and comprehensive replacement of existing changeover systems which are obsolete and no longer serviceable. Your design must address the environmentally compliant disposal of existing fuel storage infrastructure.

BULK ELECTRICAL SUPPLY NETWORK : AIRFIELD

SUPPLY FROM SUB 9
VIA 6 OFF MINISUBS

FUEL FARM BOKSBURG
11kV SUPPLY

NEW FUEL FARM SUBSTATION

P6 NEW L-BAND INCOMER
P4 BUS COUPLER
P1 BOKSBURG INCOMER
1600kVA GENERATOR
P3
P2
T1 2000kVA
T2 2000kVA
SPARE 11kV
2500A BUSBAR
3200A BUSBAR
3200A BUSBAR
2500A
3200A
3200A
ESSENTIAL
ESSENTIAL

MAIN INTAKE STATION NORTH SUPPLY : 150mm² 3-CORE PILC
MAIN INTAKE STATION SOUTH SUPPLY : 150mm² 3-CORE PILC
TO MAIN INTAKE SWITCHING STATION

AIRFIELD SWITCHING STATION (DOMTEX BASEMENT AIRSIDE)

INCOMER MAIN INTAKE NORTH P3
INCOMER MAIN INTAKE SOUTH P5
P1 P2 P4 P6 P7
3x630mm² SINGLE CORE PILC
3x630mm² SINGLE CORE PILC
132A SERIES REACTOR DRY TYPE
132A SERIES REACTOR DRY TYPE
150mm² 3-CORE PILC
150mm² 3-CORE PILC
35mm² 3-CORE PILC

SUPPLY FROM DOMTEX SUB 9 VIA MINI-SUB M/S-F
70mm² 3-CORE XLPE
35mm² 3-CORE PILC
35mm² 3-CORE PILC
70mm² 3-CORE PILC
70mm² 3-CORE XLPE

NEW L-BAND SUBSTATION
BUS COUPLER
TR1 TR2
200kVA
CHANGE OVER & DISTRIBUTION PANEL
200kVA GENERATOR
MOBILE
MOBILE CONNECTION BOX
100kVA ATNS STATIC UPS MEISSNER MP 3000 2 HOURS

SUBSTATION 03L
BUS COUPLER
500kVA
CHANGE OVER & DISTRIBUTION PANEL
500kVA GENERATOR
MOBILE
MOBILE CONNECTION BOX
BYPASS SWITCH
ROTARY UPS 330kVA
UPS DISTRIBUTION

OLD L-BAND SUBSTATION
BUS COUPLER
TR1 TR2
100kVA
NON-ESSENTIAL

SUBSTATION 15/33
BUS COUPLER
TR2 TR1
500kVA
CHANGE OVER & DISTRIBUTION PANEL
500kVA GENERATOR
MOBILE
MOBILE CONNECTION BOX
BYPASS SWITCH
ROTARY UPS 150kVA
UPS DISTRIBUTION

SUBSTATION 21R
BUS COUPLER
TR1 TR2
200kVA
CHANGE OVER & DISTRIBUTION PANEL
200kVA GENERATOR
MOBILE
MOBILE CONNECTION BOX
BYPASS SWITCH
ROTARY UPS 150kVA
UPS DISTRIBUTION

NEW OPS SUBSTATION
P1 P2 P3 P5 P4 P6 P7 P8 P9 P10 P11 SPARE
BUS COUPLER
132A SERIES REACTOR DRY TYPE
132A SERIES REACTOR DRY TYPE
250kVA
1000kVA
1000kVA

NEW OPS LV DISTRIBUTION
NON-ESSENTIAL LOAD SHED CONDUCTOR
ESSENTIAL
NON-ESSENTIAL

MINISUB H (ATNS TOWER)
MINISUB DENEL (PERIMETER LIGHTING)

35mm² 3-CORE PILC
35mm² 3-CORE PILC
35mm² 3-CORE PILC

03R SUBSTATION
BUS COUPLER
TR1 TR2
500kVA
CHANGE OVER & DISTRIBUTION PANEL
500kVA GENERATOR
MOBILE
MOBILE CONNECTION BOX
BYPASS SWITCH
ROTARY UPS 330kVA
UPS DISTRIBUTION

21L SUBSTATION
BUS COUPLER
TR1 TR2
500kVA
CHANGE OVER & DISTRIBUTION PANEL
500kVA GENERATOR
MOBILE
MOBILE CONNECTION BOX
BYPASS SWITCH
ROTARY UPS 330kVA
UPS DISTRIBUTION

ATNS SUB WEST
1000kVA

ATNS SUB EAST
1000kVA

LEGEND:

- 400V MOULDED CASE ISOLATOR
- 400V MOULDED CASE CIRCUIT BREAKER
- 11kV SWITCHGEAR PANEL
- 11kV/400V DISTRIBUTION TRANSFORMER
- 400V AIR CIRCUIT BREAKER
- 400V AIR CIRCUIT BREAKER
- STANDBY DIESEL GENERATOR
- 400V OVERHEAD BUSBAR
- 11kV RING MAIN UNIT WITH FUSE SWITCH TO TRANSFORMER

REV.	DATE	DESCRIPTION
4	-	LAMINATED & ISSUED TO ACSA.
3	-	NEW OPS SUB SWITCH POSITIONS REVISED. PANEL NUMBERS ADDED.
2	-	NEW OPS LV DISTRIBUTION ADDED. ATNS & DENEL MINI-SUBS ADDED. ATNS SUBS ADDED.
1	-	OLD AIRFIELD SUBS BUS COUPLERS ADDED & RING ARRANGEMENT CORRECTED

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CLIENT: ACSA Airports Company Southern Africa

PROJECT: OR TAMBO INTERNATIONAL AIRPORT
MV POWER NETWORK : AIRFIELD

DRAWING TITLE: SINGLE LINE DIAGRAM

scale	drawn	checked	date
NTS	MG	WH	2012-07-16

drawing no. T0060JHB E01/03 rev 4

BULK ELECTRICAL SUPPLY NETWORK : AIR FREIGHT TERMINAL

LEGEND:
- 400V MOULDED CASE ISOLATOR
- 400V MOULDED CASE CIRCUIT BREAKER
- 11kV SWITCHGEAR PANEL
- 11kV/400V DISTRIBUTION TRANSFORMER
- 400V AIR CIRCUIT BREAKER
- 400V AIR CIRCUIT BREAKER
- STANDBY DIESEL GENERATOR
- 400V OVERHEAD BUSBAR
- 11kV RING MAIN UNIT WITH FUSE SWITCH TO TRANSFORMER

TO EKURHULENI CARGO SUBSTATION
9 x 630mm² SINGLE CORE PILC : 700m

TO PASSENGER TERMINAL MAIN INTAKE STATION
9 x 630mm² SINGLE CORE PILC : 2684m

FREIGHT MAIN INTAKE STATION (ALSTOM)
- EKURHULENI CARGO SUBSTATION INCOMER
- TERMINAL BUILDINGS INCOMER
- BUS COUPLER
- SUB 2 FEEDER
- SUB 4 FEEDER

SUBSTATION 2
- INCOMER FREIGHT SWITCHING STATION P1
- INCOMER SUB 3 P6
- P3 BUS SECTION
- P2 TRANSFORMER 2 T1 FEEDER
- P4 LOCAL TRANSFORMER SUB 1 FEEDER
- P5 TRANSFORMER 2 T2 FEEDER
- TR 2 T1 1000kVA
- TR 2 T2 1000kVA
- 1600A
- ESSENTIAL
- NON-ESSENTIAL

SUBSTATION 3
- P1 RING FEED SUB 4
- P7 RING FEED SUB 3
- P3 BUS SECTION
- P2 TR 3 T1 FEEDER
- P4 RING FEED SUB-5
- P5 TRANSFORMER 3 T2 FEEDER
- P6 SPARE
- TRANSFORMER 3 T1 2000kVA
- TRANSFORMER 3 T2 2000kVA
- 3 L1
- 3 L2
- NON-ESSENTIAL
- NON-ESSENTIAL

SUBSTATION 4 ALSTOM
- P1 INCOMER FREIGHT SWITCHING STATION
- P6 RING FEED SUB 3
- P3 BUS SECTION
- P2 TRANSFORMER 4T1
- P4 RING FEED SUB 6
- P5 SPARE
- 2000kVA HAWKER SIDDELEY
- 4 L1
- NON-ESSENTIAL

185mm² 3xCORE PILC

SUBSTATION 1
- 500kVA GENERATOR PERKINS/STAMFORD
- 2 x 185mm² 4 CORE CABLES
- 800A
- 1600A
- TRANSFORMER 1 T1 1500kVA HAWKER SIDDELEY
- 1600A
- NON-ESSENTIAL
- 16mm² 3xCORE PILC
- MINI-SUB FEEDER ALSTOM SBV4 : 800A SET: 60A
- TRANSFORMER STEP-UP 1 T2 ALSTOM 1000kVA
- 1600A
- MINI-SUB 1 500kVA
- ESSENTIAL
- MINI-SUB 2 315kVA
- ESSENTIAL

SUBSTATION 5
- P1 RING OPEN POINT: SUB 7 INCOMER
- P7 RING FEED SUB 2
- P3 BUS SECTION
- P2 FEEDER ANGLO MINI-SUB
- P4
- TRANSFORMER 1 2000kVA
- NON-ESSENTIAL
- MINI-SUB ANGLO AMERICAN 315kVA

SUBSTATION 6 ALSTOM
- P2 INCOMER FEED FROM SUB 4
- P3 INCOMER FEED FROM SUB 7
- P1 TRANSFORMER 2000kVA FEEDER
- 185mm² 3 CORE PILC
- TRANSFORMER 2000kVA
- P4 FEEDER TO MINI-SUBS 2 x 500kVA
- NON-ESSENTIAL
- MINI-SUB 500kVA
- GOLF APRON HIGH MASTS
- MINI-SUB 500kVA

SUBSTATION 7 TAMCO VHIH
- P2 INCOMER No. 2 FROM SUB 5
- P1 INCOMER No. 1 FROM SUB 6
- P1 FEEDER No. 5 LOCAL TRANSFORMER
- P2 FEEDER No. 4 SIEMENS MINI-SUB
- P3 FEEDER No. 3 (SPARE)
- P4 FEEDER No. 2 (SPARE)
- P5 FEEDER No. 1 (SPARE)
- TRANSFORMER 1 10kVA
- TO PERIMETER LIGHTING
- MINI-SUB SIEMENS

REV.	DATE	DESCRIPTION
1	-	LAMINATED & ISSUED TO ACSA.
0	-	-

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CLIENT: ACSA Airports Company Across Africa

PROJECT: OR TAMBO INTERNATIONAL AIRPORT
MV POWER NETWORK : AIR FREIGHT TERMINAL

DRAWING TITLE: SINGLE LINE DIAGRAM

scale	drawn	checked	date
NTS	MG	WH	2012-07-25

drawing no. T0060JHB E01/02 — rev. 1

BULK ELECTRICAL SUPPLY NETWORK : PASSENGER TERMINALS

LEGEND:
- 400V MOULDED CASE ISOLATOR
- 400V MOULDED CASE CIRCUIT BREAKER
- 11kV SWITCHGEAR PANEL
- 11kV/400V DISTRIBUTION TRANSFORMER
- 400V AIR CIRCUIT BREAKER
- 400V AIR CIRCUIT BREAKER
- STANDBY DIESEL GENERATOR
- 400V OVERHEAD BUSBAR
- 11kV RING MAIN UNIT WITH FUSE SWITCH TO TRANSFORMER

ESSENTIAL POWER STANDBY LINK (LV)

4 x 185mm² 4-CORE LV CABLES (DOMTEX & PIER GENERATOR LV LINK VIA PIER LEVEL 1 CEILING)

2 x 185mm² 3 CORE PILC

1 x 185mm² 3 CORE PILC

SUB 10 DOMTEX PIER : GROUND FLOOR WEST

PIER MAIN LV BOARD: NON-ESSENTIAL

125kA BUSBAR

ESSENTIAL CHANGE OVER + DISTRIBUTION

125kA BUSBAR

800kVA GENERATOR

SUB 9 DOMTEX LANDSIDE BASEMENT

DOMTEX MAIN LV BOARD: NON-ESSENTIAL

DOMTEX MAIN LV BOARD: ESSENTIAL

2 x 185mm² 3-CORE PILC (DOMTEX RING VIA MSP & SKYDECK ROADS)

1 x 185mm² 3 CORE PILC

SUB 15 MSP 2 KB1 BASEMENT WEST

580kVA

CHANGE OVER BOARD

CITY LODGE SUPPLY

MAIN LV

NON-ESSENTIAL

DISTR. BOARD

ESSENTIAL

SUB 8 MSP 1 KB1 BASEMENT WEST

800kVA

CHANGE OVER BOARD

DISTR. BOARD

ESSENTIAL

1 x 630kVA

MAIN LV

NON-ESSENTIAL

2 x 185mm² 3-CORE PILC (DOMTEX RING VIA BASEMENT SERVICE TUNNEL)

SUB 4 CHILLER PLANT KB-2 BASEMENT

SUB 14 INTERNATIONAL PIER APRON LEVEL WEST

1250kVA

1250A BUSBAR

ESSENTIAL

NON-ESSENTIAL

1250A BUSBAR

MAIN INTAKE SWITCHING STATION : KB-2 BASEMENT PARKING BELOW HOTEL

9x630mm² SINGLE CORE — DISTANCE IS 2684m — TO FREIGHT INTAKE STATION

SWITCHROOM-SOUTH

FEEDERS FROM EKHURULENI ISANDO SUPER SUBSTATION

7x185mm² 3 CORE PILC CABLES (SUPPLY VIA MSP)

ALTERNATIVE SUPPLY SWITCH ROOM

SWITCHROOM-NORTH

FEEDERS FROM EKURHULENI ISANDO SUPER SUBSTATION

9x630mm² SINGLE CORE UNARMOURED PILC CABLES (SUPPLY VIA DOMTEX BASEMENT ROAD)

SUB10 AIRFIELD SWITCHING STATION FEEDER 2 — SUB 15 — SUB 12 — SUB 7 — SUB 2 — PFC1 — PFC2 — SUB1 — SUB4 — SUB3 — SUB 8 — AIRFIELD SWITCHING STATION FEEDER 1 — SUB9

2 x 150mm² XLPE

2 x 185mm² 3-CORE PILC

SUB 2 INTERNATIONAL BASEMENT

ISOLATOR ISOLATOR

ESS TR 2T1 ALLT 1000kVA

CHANGE OVER

ADDITIONAL BACK-UP

2B TR 2T6 2000 kVA

RESERVOIR SUB 100 kVA

2 x 185mm² 3-CORE PILC

2 x 185mm² 3-CORE PILC

2 x 185mm² 3-CORE PILC

2 x 185mm² 3-CORE PILC

SUB 3 KB-2 BASEMENT BELOW HOTEL

1250kVA

SUB 1 KB-2 BASEMENT

400A BUSBAR

630A

2500A

KB1 & KB2 ESSENTIAL

SUB 1 NON-ESSENTIAL

400A MCCB

1250A BUSBAR

1250A KB1 & KB2 ESSENTIAL

SUB 1 ESSENTIAL

SUB 1 SUB-MAIN LV ESSENTIAL BOARD INTERNATIONAL BASEMENT

ESSENTIAL

SUB 1 SUB-MAIN LV NON-ESSENTIAL BOARD INTERNATIONAL BASEMENT

NON-ESSENTIAL

6 x 185mm² 4 CORE CABLES

800kVA

SUB 5 INTERNATIONAL BASEMENT NORTH

1250A

SPARE 1 x 70mm²

ESSENTIAL

CHANGE OVER

GENERATOR STANDBY LV LINK BETWEEN SUBSTATIONS 2 & 5: 3 x 185mm² ALUMINIUM CABLES

GENERATOR STANDBY LV LINK BETWEEN SUBSTATIONS 11 & 14

1250A BUSBAR : GENERATOR STANDBY LV LINK BETWEEN SUBSTATIONS 1 & 2

2 x 185mm² 3-CORE PILC

2 x 185mm² 3-CORE PILC

SUB 12 CTB BASEMENT 1 SOUTH

1600kVA GENERATOR

NON-ESSENTIAL

ESSENTIAL

SUB 13 CTB BASEMENT 1 NORTH

2 x 1600kVA GENERATORS

ESSENTIAL

NON-ESSENTIAL

ESSENTIAL

GENERATOR STANDBY LV LINK BETWEEN SUBSTATIONS 12 & 13

SUB 7 ACSA OFFICES LEVEL 4

BUS COUPLER

1 x 150mm² XLPE

A/C #3 660kVA

2 x 150mm² XLPE

A/C #2 660kVA

SUB 6 ACSA OFFICES EAST ROOF

A/C #1 1000kVA

4 x 150mm² XLPE

1 x 150mm² XLPE

A/C #1 1-4

A/C #2 5-7

SUB 11 INTERNATIONAL PIER : APRON LEVEL EAST

2 x 800 kVA

ESSENTIAL

NON-ESSENTIAL

REV.	DATE	DESCRIPTION
4	-	LAMINATED & ISSUED TO ACSA.
3	-	SUB 9 PANEL NO.s CORRECTED.
2	-	SUB 15 & 8 LAYOUTS REVISED.
1	-	MAIN INTAKE RING FEEDER REV. & MINISUB RING ARRANGEMENTS CORRECTED.
0	-	-

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CLIENT: ACSA Airports Company Across Africa

PROJECT: OR TAMBO INTERNATIONAL AIRPORT

MV POWER NETWORK : PASSENGER TERMINAL BUILDINGS & SURROUNDING AREAS

DRAWING TITLE: SINGLE LINE DIAGRAM

scale	drawn	checked	date
NTS	MG	WH	2012-07-16

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