



Republic Of Iraq
Ministry Of Electricity
General Directorate of Electrical Power
Transmission Upper Euphrates Region

Tender /UE/2015

**Reconstruction of Ramadi east substation 132/33/11KV
& Tikrit South substation 132/33/11KV**

Design, supply of equipment & materials, training

Reconstruction of Ramadi east substation 132/33/11KV

Ramadi East substation location

Iraq-AL-Anbar governorate

Ramadi town

Reconstruction of Ramadi east substation 132/33/11KV

The scope of work for this tender include the following

| Item | Description | Price |
|------|---|-------|
| 1 | Design of complete electro-mechanical work of substation including the matching between the supplied equipment and existing equipment which not supplied by this tender and submission of all type of drawing necessary for installation of the equipment , as well as submission of all technical documents required for construction , installation , testing , commissioning and put in operation of the equipment | |
| 2 | Design , manufacture and supply of new equipment and materials scheduled No.1 , No2 | |
| 3 | Training of 4 person as per schedule No.3 | |

Reconstruction of Ramadi-East substation 132/33/11KV

Schedule No.1

| No | Specification | Unit | QTY | Price |
|-------|---|------------|-----|-------|
| 1 | 132KV, 2500Amp, 40KA for 3sec, 50Hz indoor switchgear with motor charged spring type mechanism including all equipments and function and any required extra sub items as if needed for safe and reliable operation as per the attached single line diagram and according to IEC standards and MOE requirements Consist the following | | | |
| 1.1 | Bus bar 132KV, 2500 Amp,40KA, 3secequipments consisting of | | | |
| 1.1.1 | Three poles Bus bar 132KV,2500Amp , 40KA , 3sec | Set (3pcs) | 2 | |
| 1.1.2 | Three poles BUS bar Voltage transformer 132/ $\sqrt{3}$ /110/ $\sqrt{3}$ / 110 / $\sqrt{3}$ 3 | pcs | 2 | |
| 1.1.3 | Three poles Bus isolator | pcs | 2 | |
| 1.1.4 | Three poles Bus bar earthing switch | pcs | 2 | |
| 1.2 | Line bay consisting of for each | Set | 6 | |
| 1.2.1 | Three poles Bus isolator | pcs | 2 | |
| 1.2.2 | Three poles Line isolator | pcs | 1 | |
| 1.2.3 | Three poles Circuit breaker 1600Amp | pcs | 1 | |
| 1.2.4 | Metal enclosed current transformer 600-1200/5/5/5 | Set(3pcs) | 1 | |
| 1.2.5 | Three poles Earthing switch | pcs | 2 | |
| 1.2.6 | Three poles High speed line earthing switch | pcs | 1 | |
| 1.2.7 | Metal enclosed voltage transformer 132/ $\sqrt{3}$ /110/ $\sqrt{3}$ /110/ $\sqrt{3}$ | set(3pcs) | 1 | |
| 1.2.8 | Power cable connection compartments | set(3pcs) | 1 | |
| 1.2.9 | Indoor GIS Cable end termination with all necessary accessories | pcs | 40 | |
| 1.3 | Transformer bays consisting of | Set | 3 | |
| 1.3.1 | Three poles Bus isolator. | pcs | 2 | |
| 1.3.2 | Three poles Circuit breaker 1600Amp. | pcs | 1 | |
| 1.3.3 | Metal enclosed current transformer 300-600 /5/5/5 | Set (3pcs) | 1 | |
| 1.3.4 | Three poles Earthing switch. | pcs | 2 | |
| 1.3.5 | Power cables connecting compartment. | Set (3pcs) | 1 | |
| 1.3.6 | Indoor G.I.S Cable end termination. | pcs | 10 | |
| 1.4 | Bus coupler bay consisting of. | Set | 1 | |
| 1.4.1 | Three poles Bus isolator. | pcs | 2 | |
| 1.4.2 | Three poles Circuit breaker 2500Amp. | pcs | 1 | |
| 1.4.3 | Three poles Metal enclosed current transformer 600 -1200/5/5/5 . | set(3pcs) | 1 | |
| 1.4.4 | Three poles Earthing switch . | pcs | 2 | |
| 1.5 | Local control panel for GIS bays .with all required necessary equipment like switch and signal lamp & other equipment needed for safe and reliable operation of the GIS bays. | Set (3pcs) | 10 | |

| No | Specification | Unit | QTY | Price |
|-----|---|------|-----|-------|
| 1.6 | Steel construction / anchors bolts for 132 k v GIS supports . | Lot | | |
| 1.7 | Gas isolator (sf6) enough for all rooms +20% Spare | Lot | | |
| 2 | Automat : fire extinguishers system suitable for all indoor equipment in the substation | Set | 1 | |
| 3 | Protection panel equipped with suitable necessary protection device . | Set | 12 | |
| 3.1 | Protection panel for 132 k v lines bays. | Pcs | 6 | |
| 3.2 | Protection panel for transformer bays. | Pcs | 3 | |
| 3.3 | Protection panel for B.couples bays . | Pcs | 1 | |
| 3.4 | Protection panel for bus-bar and common equipment | Pcs | 2 | |
| 4 | substation control and signaling and metering system (scs) should be provided for each 132/33/11 KV equipment according to single line diagram | Set | | |
| 4.1 | Control and signaling and metering system for OH line bays | Pcs | 6 | |
| 4.2 | Control and signaling and meteringsystem for power transformer | Pcs | 3 | |
| 4.3 | control and signaling and metering system for bus coupler bay | Pcs | 1 | |
| 4.4 | control and signaling and meteringsystem for three sections 33KV switchgear consist of transformer income bays | Pcs | 3 | |
| | outgoing feeder bays | Pcs | 15 | |
| | capacitor bank bays | Pcs | 3 | |
| | bus sections bays | Pcs | 2 | |
| | bus bar V.T bays | Pcs | 3 | |
| 4.5 | Control and signaling system for three sections 11KV switchgear consist of transformer income bays | Pcs | 3 | |
| | outgoing feeder bays | Pcs | 18 | |
| | auxiliary and earthing transformer feeder bays | Pcs | 3 | |
| | bus sections bays | Pcs | 2 | |
| | bus bar V.T bays | Pcs | 3 | |
| 4.6 | Control and signaling for 110V D.C | Set | 2 | |
| 4.7 | Control and signaling for 48V DC system | Set | 1 | |
| 4.8 | Control and signaling for service 0.4KV A.C system | Set | 3 | |
| 5 | Supply substation energy metering | Pcs | 54 | |
| | • Energy metering panels for 132KV lines bays | | 10 | |
| | • Energy metering panels for transformer 33KV | | 20 | |
| | • Energy metering panels for transformer 11KV | | 24 | |
| 6 | Control and low voltage (0.6/1KV) cables and termination and all other necessary material for marking, fixing, auxiliary equipment, wiring, labels, glands and ferrules for cable core numbering. (including 20% spare supply). | Lot | | |

Reconstruction of Ramadi East substation

Schedule No. 2

Spare parts and maintenance equipment for five year from the same type and specification of main equipment including, but not limited to following:

| No | Specification | Unit | QTY | Price |
|----|---|------------|-----|-------|
| 1 | Three poles Bus isolator for line | pcs | 1 | |
| 2 | Three poles Circuit breaker 1600Amp | pcs | 1 | |
| 3 | Current transformer 600-1200/5/5/5 | Set (3pcs) | 1 | |
| 4 | Current transformer 300-600/5/5/5 | Set(3pcs) | 1 | |
| 5 | Three poles Earthing switch | pcs | 1 | |
| 6 | Three poles High speed line earthing switch | pcs | 1 | |
| 7 | Three poles Metal enclosed voltage transformer | Pcs | 1 | |
| 8 | Power cable connection compartments | Set (3pcs) | 1 | |
| 9 | Protection relay from each type 2pcs | Pcs | 10 | |
| 10 | Meter from each type | Pcs | 2 | |
| 11 | Electronic cart from each type | Pcs | 2 | |
| 12 | Auxiliary relay from each type | Pcs | 5 | |
| 13 | Selector switch from each type | Pcs | 5 | |
| 14 | On/Off switch from each type | Pcs | 5 | |
| 15 | Indicating instrument from each type | Pcs | 5 | |
| 16 | Circuit breaker closing coil | Pcs | 5 | |
| 17 | Circuit breaker trip coil | Pcs | 10 | |
| 18 | Density indicator | pcs | 5 | |
| 19 | Repair kits for circuit breaker & switchgear from each type | Set (3pcs) | 2 | |
| 20 | Operating motor from each type (CB, isolator, earthing switch) | Pcs | 2 | |
| 21 | Sf6 Gas analyzer equipment | Pcs | 1 | |
| 22 | Gas leakage indicator | Pcs | 1 | |
| 23 | Sf6 Gas filling and treatment equipment with all necessary accessories and fitting. | Pcs | 1 | |
| 24 | Secendary injection equipment with laptop and all necessary accessories connection and software | Set (3pcs) | 2 | |
| 25 | Electro mechanical tools and special tools | Set (3pcs) | 2 | |

Reconstruction of Ramadi East substation

Schedule No. 3

Persons to get training at the manufacturing factory for execution, installation, commissioning, and testing for equipment

| No | Person | Description type of training | Working weeks with out travelling days |
|----|--------|------------------------------|--|
| 1 | 2 | 132KV GIS switch gear | 2 |
| 2 | 2 | Protection system | 2 |

Tikrit South substation 132/33/11KV

Tikrit South substation location

IRAQ-Salah El-dein governorate

Tikrit town

Reconstruction of Tikrit south substation 132/33/11KV

The scope of work for this tender include the following

| Item | Description | Price |
|------|---|-------|
| 1 | Design of complete electro-mechanical work of substation including the matching between the supplied equipment and existing equipment which not supplied by this tender and submission of all type of drawing necessary for installation of the equipment , as well as submission of all technical documents required for construction , installation , testing , commissioning and put in operation of the equipment | |
| 2 | Design , manufacture and supply of new equipment and materials scheduled No.1 , No2 , No3 | |
| 3 | Training of 4 person as per schedule No.4 | |

Reconstruction of Tikrit South substation 132/33/11KV

Schedule No.1

| No | Specification | Unit | QTY | Price |
|-------|---|------------|-----|-------|
| 1 | 132KV, 2500Amp, 40KA for 3sec, 50Hz indoor switchgear with motor charged spring type mechanism including all equipments and function and any required extra sub items as if needed for safe and reliable operation as per the attached single line diagram and according to IEC standards and MOE requirements Consist the following | | | |
| 1.1 | Bus bar 132KV, 2500 Amp,40KA, 3secequipments consisting of | Set | 2 | |
| 1.1.1 | Three poles Bus bar 132KV,2500Amp,40KA,3sec | Set(3pcs) | 2 | |
| 1.1.2 | Three poles Bus bar Voltage transformer 132/√3 /110/√3 / 110 /√3 | Pcs | 2 | |
| 1.1.3 | Three poles Bus isolator | Pcs | 2 | |
| 1.1.4 | Three poles Bus bar earthing switch | pcs | 2 | |
| 1.2 | Lines bays consisting of for each | Set | 6 | |
| 1.2.1 | Three poles Bus isolator | Pcs | 2 | |
| 1.2.2 | Three poles Line isolator | Pcs | 1 | |
| 1.2.3 | Three poles Circuit breaker 1600Amp | Pcs | 1 | |
| 1.2.4 | Metal enclosed current transformer 600-1200/5/5/5 | Set(3pcs) | 1 | |
| 1.2.5 | Three poles Earthing switch | Pcs | 2 | |
| 1.2.6 | Three poles High speed line earthing switch | Pcs | 1 | |
| 1.2.7 | Metal enclosed voltage transformer | Set(3pcs) | 1 | |
| 1.2.8 | Power cable connection compartments | Set(3pcs) | 1 | |
| 1.2.9 | Indoor GIS Cable end termination with all necessary accessories | pcs | 40 | |
| 1.3 | Transformer bays .consisting of for each | Set | 3 | |
| 1.3.1 | Three poles Bus isolator. | Pcs | 2 | |
| 1.3.2 | Three poles Circuit breaker 1600Amp. | Pcs | 1 | |
| 1.3.3 | Metal enclosed current transformer 300-600 /5/5/5 | Set(3pcs) | 1 | |
| 1.3.4 | Three poles Earthing switch. | Pcs | 2 | |
| 1.3.5 | Power cables connecting compartment. | Set(3pcs) | 1 | |
| 1.3.6 | Indoor G.I.S Cable end termination. | pcs | 10 | |
| 1.4 | Bus coupler bay consisting of. | Set | 1 | |
| 1.4.1 | Three poles Bus isolator. | Pcs | 2 | |
| 1.4.2 | Three poles Circuit breaker 2500Amp. | Pcs | 1 | |
| 1.4.3 | Three poles Metal enclosed current transformer 600 -1200/5/5/5 . | Set(3pcs) | 1 | |
| 1.4.4 | Three poles Earthing switch . | pcs | 2 | |
| 1.5 | Local control panel for GIS bays .with all required necessary equipment like switch and signal lamp & other equipment needed for safe and reliable operation of the GIS bays. | Set (3pcs) | 10 | |

| No | Specification | Unit | QTY | Price |
|---------|---|------|-----|-------|
| 1.6 | Steel construction / anchors bolts for 132 k v GIS supports . | Lot | | |
| 1.7 | Gas isolator (sf6) enough for all rooms +20% Spare | Lot | | |
| 2 | Automatic fire extinguishers system suitable for 132KV GIS switchgear | Set | 1 | |
| 3 | Protection panel equipped with suitable necessary protection device . | Set | 12 | |
| 3.1 | Protection panel for 132 k v lines bays. | Pcs | 6 | |
| 3.2 | Protection panel for transformer bays. | Pcs | 3 | |
| 3.3 | Protection panel for B.couples bays . | Pcs | 1 | |
| 3.4 | Protection panel for bus-bar and common equipment. | Pcs | 2 | |
| 4 | Supply substation control and signaling and metering system (scs) should be provided for each 132/33/11 KV equipment according to single line diagram | Set | | |
| 4.1 | Control and signaling and meteringsystem for OH line bays | Pcs | 6 | |
| 4.2 | Control and signaling and meteringsystem for power transformer | Pcs | 3 | |
| 4.3 | control and signaling and meteringsystem for bus coupler bay | Pcs | 1 | |
| 4.4 | control and signaling and meteringsystem for three sections 33KV switchgear consist of | Pcs | 3 | |
| | transformer income bays | Pcs | 15 | |
| | outgoing feeder bays | Pcs | 3 | |
| | capacitor bank bays | Pcs | 2 | |
| | bus sections bays | Pcs | 3 | |
| 4.5 | bus bar V.T bays | | | |
| | Control and signaling system for three sections 11KV switchgear consist of | Pcs | 3 | |
| | transformer income bays | Pcs | 18 | |
| | outgoing feeder bays | Pcs | 3 | |
| | auxiliary and earthing transformer feeder bays | Pcs | 2 | |
| | bus sections bays | Pcs | 3 | |
| 4.6 | bus bar V.T bays | Set | 2 | |
| 4.7,4.8 | Control and signaling for 110V and D.C | | 1 | |
| | Control and signaling for 48V DC system | Set | 3 | |
| | Control and signaling for service 0.4KV A.C system | | | |
| 5 | Supply substation energy metering | Pcs | 58 | |
| | • Energy metering panels for 132KV lines bays | | 10 | |
| | • Energy metering panels for 33KV bays | | 24 | |
| | • Energy metering panels for 11KV bays | | 24 | |
| 6 | Control and low voltage (0.6/1KV) cables and termination and all other necessary material for marking, fixing, auxiliary equipment, wiring, labels, glands and ferrules for cable core numbering. (including 20% spare supply). | Lot | | |

| No | Specification | Unit | QTY | Price |
|----|---|------|--------|-------|
| 7 | 132KV AL power cable 1* 800mm ² XLPE 150m for each line bay | M | 12*150 | |
| 8 | Outdoor cable end termination for cable 1*800 mm ² for each line bay with suitable steel structure | Set | 14 | |
| 9 | Steel structure for two line gantry for twin teal line | Set | 2 | |
| 10 | 132KV capacitive voltage transformer with suitable steel structure | Set | 3 | |
| 11 | 132KV line surge arrestor with suitable steel structure | Set | 3 | |

Reconstruction of Tikrit South substation 132/33/11KV

Schedule No.2

Material for communication for two 132KV overhead line

| No | Item Description | Unit | Qty | price |
|----|--|------|-----|-------|
| 1- | Wave traps : 0.5 mH, 1600 A , 40 KA , hanging type . the blocking impedance shall be minimum of 800 ohm over required band frequencies to be connected phase to'phase on (R & S) for each line. The frequency bandwidth should be (40 - 500) kHz. The blocking bandwidth should be (40 - 500) kHz. | pcs | 4 | |
| 2- | Line Matching Unit (L.M.U) To be connected phase to phase (R& S)for each line . | Set | 2 | |
| 3- | Power Line Carrier (PLC) Digital Transmission type. Single side band with suppression carrier (SSBSC) the frequency band for PLC should be 8 KHz for Tx and 8 kHz for Rx separately the band could be adjusted as required i.e. 2 kHz 4 kHz & 8kHz. PLC should be operating as analog and digital at the same time (i.e.all analog and digital cards should be provided) . Power Line Carrier would be used for telephony& data transmission plus teleportation & shall confirm to IEC Recommendation 60495 For DPLC : Internal Mux card providing 2x4 WE &Minter face , 1x2 W voice interface (for each link ,1side will be exchange side and other will be subscriber side), 4RS232 data 1200 baud for IEC 101. - 4 W with E&M card – Exchange side card & subscriber side card for each PLC link . - 1200 baud R5232 data channel via integrated modem. license:- Free | Set | 2 | |
| 4- | license for all above interfaces and cards. | Set | 2 | |
| 5- | Protection Signaling equipment (PSE-) 1 PSE links(2 pcs) on each132kv line. With two independent commands . Communication cables: Telephone cable: - (0.6mm x 2 x20) for indoor connection to MDF - (0.6mm x 2 x5) for indoor connection to MDF - (0.9mm x 2 x20) armored for outdoor connection Jumper wires: (0.6mm x 2) twisted pairs for connections on the MDF Coaxial cable: impedance 74 ohm, a rmored,losses less than 0.5db per 100m at 500kHz frequency AC & DC (2X4)mm cable as AC source - (2X.)mm cables s DC between communication equipment and charger | Lot | | |

Extension of Tikrit-South substation 132/33/11KV

Schedule No.3

Spare parts and maintenance equipment for five year from the same type and specification of main equipment including, but not limited to following:

| No | Specification | Unit | QTY | Price |
|----|---|-----------|-----|-------|
| 1 | Bus isolator | pcs | 1 | |
| 2 | Circuit breaker 1600Amp | Pcs | 1 | |
| 3 | Current transformer 600-1200/5/5/5 | Set(3pcs) | 1 | |
| 4 | Current transformer 300-600/5/5/5 | Set(3pcs) | 1 | |
| 5 | Earthing switch | Pcs | 1 | |
| 6 | High speed line earthing switch | pcs | 1 | |
| 7 | Metal enclosed voltage transformer | Pcs | 1 | |
| 8 | Power cable connection compartments | Set(3pcs) | 1 | |
| 9 | Protection relay from each type 2pcs | Pcs | 10 | |
| 10 | Meter from each type | Pcs | 2 | |
| 11 | Electronic cart from each type | Pcs | 2 | |
| 12 | Auxiliary relay from each type | Pcs | 5 | |
| 13 | Selector switch from each type | Pcs | 5 | |
| 14 | On/Off switch from each type | Pcs | 5 | |
| 15 | Indicating instrument from each type | Pcs | 5 | |
| 16 | Circuit breaker closing coil | Pcs | 5 | |
| 17 | Circuit breaker trip coil | Pcs | 10 | |
| 18 | Density indicator | pcs | 5 | |
| 19 | Repair kits for circuit breaker & switchgear from each type | Set(3pcs) | 2 | |
| 20 | Operating motor from each type (CB, isolator, earthing switch) | Pcs | 2 | |
| 21 | Sf6 Gas analyzer equipment | Pcs | 1 | |
| 22 | Gas leakage indicator | Pcs | 1 | |
| 23 | Sf6 Gas filling and treatment equipment with all necessary accessories and fitting. | Pcs | 1 | |
| 24 | Secondary injection equipment with laptop and all necessary accessories connection and software | Set(3pcs) | 2 | |
| 25 | Electro mechanical tools and special tools | Set(3pcs) | 2 | |

Tikrit South substation 132/33/11KV

Schedule No. 4

Persons to get training at the manufacturing factory for execution, installation, commissioning, and testing for equipment

| No | Person | Description type of training | Working weeks with out travelling days | Price |
|----|--------|------------------------------|--|-------|
| 1 | 2 | 132KV GIS switch gear | 2 | |
| 2 | 2 | Protection system | 2 | |

Section 1: Technical Documents

1. General

1.1 The contractor shall prepare necessary technical documents for the equipment including drawings, design calculations and specifications showing full details of the equipment and materials to be used as well as all arrangement and foundation drawings related to the works.

1.2 Prior to the commencement of manufacturing at factories or installation at the site, the contractor shall submit technical documents and drawings to MOE for approval. Any comments given by MOE shall be taken into account before manufacturing at factories and/or the site works, and if any modification or change is directed by MOE, the documents shall be revised and resubmitted for approval after making necessary revisions.

1.3 Approval of the documents shall in no way relieve the contractor from any of his contractual obligation.

1.4 All costs and expenses for preparation and submission of the documents shall be borne by the contractor including for revision and submission of the documents.

1.5 Language

All technical documents to be submitted shall be made in English. Technical terms in English shall preferably be referred to IEC standards as much as applicable.

1.6 Symbols, marks and abbreviations

All symbols, marks and abbreviations etc. using on any documents shall be clearly explained by a legend on the same document or on separate sheets.

1.7The abbreviation and marks used for an individual device shall be identical throughout the complete documentation so as to avoid confusion.

1.8 Sizes and identifications of documents The size of the drawings shall be as follows:

A1 (594mmx841mm)

A2 (420 mm x 594 mm)

A3 (297 mm x 420 mm)

A4 (210 mm x 297 mm)

1.9 Design calculations, specifications, lists, instruction manuals and other documents shall preferably be prepared and submitted in A4 size.

1.10 All documents shall have a uniform title block at the bottom right hand corner, irrespective of the origin of the documents. The title block shall show the drawing title, drawing number, revision number or letter, date prepared, name of the contractor and/or manufacturer and the signature of the contractor's representative and project office name.

1.11 A sufficient blank space shall be provided above the title block of each document for MOE's comments.

2- Typical Technical documents required to be submitted

The contractor shall submit the following technical documents as per Master List of drawings and Documents (i.e., document control list):

2.1 Master List of drawings and Documents (document control list) After contract agreement, the contractor shall create and submit a master list of drawings and documents to be provided under the contract for approval of MOE, for a purpose of monitoring and smooth processing of document approval, which shall contain the document title and number, its size, date to be submitted, re-submission date, approval date etc. under each column of relevant document classification or category.

2.2 Specifications

The contractor shall prepare specifications for all principal equipment and materials. The specification shall bear the type, ratings, design, construction, materials, dimensions corrosion protection and other performance of the equipment.

2.3 Drawings

The following drawing shall be submitted for approval:

- a) Arrangement and Layout drawings of equipment
- b) Foundation drawings for installation purpose of equipment
- c) Installation drawings for equipment

2.4 Diagrams

The following diagrams shall be submitted for approval

- a) Single Line diagrams
- b) Circuit Diagrams including three line of power circuit and schematic diagrams
- c) Block diagrams where necessary
- d) Terminal diagrams

2.5 Calculation sheets

The contractor shall submit design calculation sheets for capacity of auxiliary power supply, burden of

instrument transformers, battery capacity etc. for MOE.'s approval.

2.6 Lists

The following lists shall be submitted for approval.

- a) Cable Lists
- b) Relay setting List
- c) List of testing equipment and standard tools
- d) List of spare parts

2.7 Test Schedules

2.8 Test Procedures

2.9 Test Reports

2.10 Instruction Manuals

2.11 As-built Drawings

2.12 Type test report

The contractor shall submit the type test report for major electrical equipment for an evaluation of conformity to the specification in the tender process

3. Required numbers of Documents

Numbers of the documents to be submitted to MOE shall be as follows:

3.1 During the course of manufacturing and installation

Documents for approval 2 copies

Reference documents 2 copies

3.2 After completion of the work

Complete sets of bound prints 3 copies

Of as-built documents

CD ROM contained as-built documents 3 sets

in PDF format

4. Time of drawings approval

1. After contract agreement, the contractor should submit a master list of drawings within two week.
2. Other type of drawings should be submitted for approval within a period not more than two month, and it should be submitted in a way that give smooth processing of document approval.
3. The time for approval of the drawing consider from the contract time.
4. The office should approve the drawing within one month from receiving the drawing.
5. The contractor has the right to ask for extra time if he not get the approval of drawing in the time specified in item (4).

Section 2: Inspection and tests

1. All equipment and materials should be manufactured and tested according to IEC specification and standard and MOE requirement

2. List for all tests which will be carried out on the equipment classified as (routine test, type test, special test) must be included in the offer.
3. Routine test should be carried out by the manufacturer for all equipment and test reports should be submitted.
4. Type test reports should be submitted for the same type of equipment if this test was done within the last three years otherwise, type test should be done by the manufacturer.
5. Special test should be done by the manufacturer for the equipment if it is needed by MOE.
6. The contractor should grant access for MOE and/or his assigned representative to attend and witness the tests of the equipment at the manufacturer's factory.
7. MOE representative should be one of international testing and inspection Company member in IFIA and approved by MOE and testing reports should be approved by this company.
8. The contractor should offer a letter from the assigned company including their agreement to witness the test of the equipment according to IEC standard and MOE requirements at the manufacturer's factory as in the attached (inspection company obligation).
9. All costs and expenses which will involve for such test should be borne by the suppliers and they will arrange themselves to do that with the manufacturer.
10. The manufacturer should submit all test procedures to MOE for approval and the tests shall be carried out in accordance with the approved test procedures.
11. Written notice of the exact date, time and place of test to be attended as well as necessary information should be given to MOE.

and/or his assigned representative not later than four weeks prior to the date of any such test.

The contractor shall provide the witnessing participants all facilities for a proper and timely execution of the tests.

12. All tests results shall be approved by MOE. The approval of the tests, acceptance of the test certificates or waving of tests shall not relieve the contractor from his contractual obligations.

Section 3: Trainings

The contractor shall arrange and cooperate to invite engineers from MOE for trainings in the manufacturer factory as in schedule No. 3

1. All necessary expense such as the charge of air ticket between Iraq and countries where the training to be carried out, accommodation charges as well domestic travel charges in the countries where the training to be carried out shall be borne by the contractor

2. The subject of training should specified by MOE

3. Training and time schedule and detailed curriculums should be submitted to MOE for approval before training

4. The contractor should inform MOE at least one month prior the training date

Section 4: execution the work

- 1- After the awarding the work the contractor should offer a time schedule for execution the work.
- 2- In case of the tenderer is not manufacturing company, the tendered should offer a letter from the company which will supply the material confirm that they will supply the material as in the bell of quantity of the tender, do all design needed for the work and give the technical support to the to the contractor in period of erection, installation, testing and commissioning and put in operation.

Note : Origin of materials

The origin of materials should be from

- 1- European countries ,United States Of America, Japan.
- 2- Korea south, Croatia.

"Inspection Company Obligation"

**To: Ministry of Electricity/ General Directorate of Electrical power
Transmission Upper Euphrates Region.**

Subject / Tender No.....

**We..... inspection company member in the IFIA
obligate to the following :**

1 - Witness all factory tests conducted on the contracts equipment

**No signed between Ministry of Electricity-
General Directorate of Electrical power Transmission Upper
Euphrates Region and company according
to test clause in the tenders condition at company's factory
conducted by the manufactures.**

**2 - approve all factory test certificate issued by the manufactures
and marking the unconformity to international specification , MOE
requirements and contract terms.**

**3 - Our company will held legal responsibility before MOE in case
we have evidence to the contrary to inspection certificate signed by
us .**

**4 - Our payments should be paid by manufacturer company for the
equipment Company.**

Company manager or representative

ATTACHED CD:

1. Tender
2. specification for 400/138.6/11KV mobile S.S
3. 400KV GIS presentation PDF

Note:

The tenderer should fill all schedules in volume 3 for the equipment which will supplied in this tender.