Bid Bulletin No. 2

August 30, 2019

PUBLIC BIDDING No. 19 – 261– 2

SUPPLY, DELIVERY, INSTALLATION AND COMMISSIONING OF NEW MOVEMENT AREA GUIDANCE SIGNS (MAGS) AND VARIOUS AIRFIELD LIGHTING COMPONENTS FOR SUBIC BAY METROPOLITAN AUTHORITY (SBMA)

Issued pursuant to Sec. 22.5 of the IRR of R.A. 9184 to clarify and/or amend[1] certain provisions in the Bidding Documents issued for this project, considering the issues raised and clarifications made by prospective bidders during the **Pre-Bid Conference** held on **16 August 2019**, likewise, respond to bidders' written queries received within the prescriptive period for filing.

I. Amendments:

A. Bid Data Sheet

<table>
<tr><th>REFERENCE/AMENDMENT</th><th>JUSTIFICATION/ EXPLANATION</th></tr>
<tr><td>ITB CLAUSE 12.1(B)(II.2):
xxx
<table>
<tr><th>Key Personnel</th><th>Minimum Years of Relevant Experience</th></tr>
<tr><td>Project Manager (Licensed Electrical or Electronics Engineer)</td><td>with at least 5-year cumulative experience in installing Airfield Lighting System or <u>VISUAL</u> air navigational aids within the last ten (10) years</td></tr>
<tr><td>Project Engineer (Licensed Electronics or Electrical Engineer)</td><td>with at least 5-year cumulative experience in installing Airfield Lighting System or <u>VISUAL</u> air navigational aids within the last ten (10) years</td></tr>
<tr><td>Foreman</td><td>with at least 10-year cumulative experience in installing Airfield Lighting System or <u>VISUAL</u> air navigational aids within the last fifteen (15) years</td></tr>
<tr><td>xxx</td><td>xxx</td></tr>
</table>
xxx</td><td>Per clarification with the end user agency, the Key Personnel must have relevant experience in installing Airfield Lighting System or <u>VISUAL</u> air navigational aids.</td></tr>
</table>

[1] *For the purpose of this Bulletin and for better understanding of its contents, the following rules shall apply: (a) ~~Double Strike out~~ – denotes deletion; (b) <u>Underline</u> – denotes inclusion or new item/requirement; and "xxx" – denotes separation of phrase/s being amended from the rest of the main text.*

Section V. Special Condition of Contract **GCC Clause 40.4** ~~No further instructions~~ **Not Applicable**	To correct GCC Clause 40.4. Clause 40.1 shall be followed for the progress payment.

B. Technical Specifications:

REFERENCE/AMENDMENT	JUSTIFICATION/ EXPLANATION
Movement Area Guidance Signs ~~A.3.1 "The signs shall be certified to FAA AC 150/5345-44 (latest edition) for Mechanical – Properties and Frangibility"~~ ~~A.3.2 "The signs shall be certified to FAA AC 150/5345-44 (latest edition) for Photometric, Chromaticity, and Wind Load to ICAO Annex 14, Vol. 1."~~ **A.3.1 "The signs construction and structure shall be compliant to ICAO Annex 14 Vol. 1 or FAA AC 150/5345-44 or equivalent international standards.**	To encourage more bidders to participate, Section A.3.1.-A.3.2 is combined as one and is amended as follows.
A.3.6 Necessary Interface transformers, electronics converters inverters and protective device for functions to 2.8 amps from 6.6 amps 5 steps CCR lighting circuit; the LED sign shall have an input Power Factor ~~≥0.99~~ **of not less than 0.90 or manufacturer's standard but not lower than 0.90 pf** as measured on the primary of the L-830 or L-831 isolation transformer.	Section A.3.6 is amended to Power Factor of not less than 0.90 or manufacturer's standard but not lower than 0.90 pf.
C.1.18 The efficiency shall be ~~at least 95%~~ **between 90% to 95%.**	For the intended purpose and function of the CCR, efficiency between 90% to 95% is acceptable.
Item F.5: All electrical wires shall undergo insulation testing ~~with min 1Mohm~~ in accordance with ICAO Document 9157, Aerodrome Design Manual Section 15.9 and 15.10.	To correct item F.5.
Section 6:Technical Specification The form for compliance should be submitted with the detailed specification	To correct the form. See Revised Form attached as Annex A.

C. Bidding Forms

REFERENCE/AMENDMENT	JUSTIFICATION/ EXPLANATION
Annex F List of Equipment, Owned or Leased And/Or Under Purchase Agreement, Pledged To The Proposed Contract	To correct the form. See Revised Form attached as Annex B.
Annex G Statement of Single Largest Completed Contract Similar To The Contract To Be Bid	To correct the form. See Revised Form attached as Annex C.

II. Clarifications:

Prospective Bidders Written Clarification		
ITEM	ISSUE/CONCERN	CLARIFICATIONS
1	Based on ITB and Bidding Documents issued, we understand that the subject project is Civil Works and is classified as Procurement of Infrastructure. However, we noticed that in Section 5.1 (c) & (e) of the Instructions to Bidders, it allows Citizens, Partnership, Persons, Entities forming themselves into a JV…of 60% of the interest belongs to citizens of the Philippines as eligible bidders. We understand per IRR of RA9184, it allows 75% of the interest belongs to citizens of the Philippines, please clarify.	Please refer to GPPB Resolution No. 06-2019 ADOPTION OF FOREIGN EQUITY REQUIREMENT UNDER EXECUTIVE ORDER NO. 65 S. 2018 AND AMENDMENT OF THE RELEVANT PROVISIONS OF THE 2016 REVISED IMPLEMENTING RULES AND REGULATIONS OF REPUBLIC ACT NO. 9184
2	Clarification of BDS No. 5.4 "Similar Largest Contract Completed (SLCC)'" definition of Air Navigational Aids.	"Air Navigational Aids "for the purpose of clarification is defined as "**Visual Air Navigational Aids."**

3	Affidavit/Certification of Site Inspection requirement.	Site Inspection is encouraged but not mandatory. "Annex I, Affidavit of Site Inspection" Page 132 of the bidding documents is no longer necessary. However, a bidder shall submit a certification from the bidder stating whether they conducted a site inspection or not.
4	Movement Area Guidance Signs 1.1 Section A.3.1-A.3.2, can we submit other international standards such as ICAO or other international standards, since FAA certificate will cater only to US manufacturer only.	Please refer to the amendment in I. B. of this bid bulletin.
5	1.2 Section A.3.6 Can we offer a Guidance Signs with a Power Factor of >0.95.	Please refer to the amendment in I. B. of this bid bulletin.
6	Constant Current Regulator (CCR) 2.1 Section C.1.18, is the efficiency 90% to 92% for Constant Current Regulator be acceptable.	Please refer to the amendment in I. B. of this bid bulletin.
7	2.2 Section C.1.21, Can we offer different control board for different capacity CCR?	Requirement is maintained as stated.
8	Circuit Selector 3.1 Section C.2.1, Can we offer Circuit Selector without built in lightning arrester since the CCR's has a lightning arrester already.	Requirement is maintained as stated.

During Pre-Bid:

ITEM	ISSUE/CONCERN	CLARIFICATIONS
1	ITB Clause 28.2: A prospective bidder asked if the reckoning period of the Latest VAT Returns to be submitted is on the date of the Opening of Bids or the Notice of the BAC.	Reckoning period is on the date of the Opening of Bids.
2	GCC Clause 40.1: A prospective bidder asked that since the project is an infrastructure, payment should depend on the accomplishment of the contractor or on a monthly basis.	Maintain Requirement. Please refer to Section V. SCC clause 40.1 of the GCC.
3	Facilities for The Engineer: The personnel that will assist the Engineer shall be clarified through a bid bulletin.	The contractor will provide personnel that will assist the engineer of SBMA during the implementation which shall be approved by the project in charge for SBMA. No need to submit the list of personnel and respective resume during the submission of bid.
4	Item A.9: A prospective bidder asked how will be the method of qualifying the equivalency of compliance with ICAO/FAA.	Compliance shall be supported by brochures or certificates.
5	Item H.6: A prospective bidder asked if a brochure will be submitted.	No need to submit brochures for this item. Bidder shall submit deed of undertaking that they will supply the requirement.
6	Item H.6.9: A prospective bidder asked to specify the precision tools.	Precision tools are set of screw drivers specific or applicable to the equipment to be supplied.

All other provisions of the bidding documents affected by this amendment are deemed modified or amended accordingly.

Amendments made herein shall be considered an integral part of the Bidding Documents.

(SGD.) ENGR. MANUEL S. AVILA
Chairperson, BAC II

Technical Specifications

(to be included in the Technical Envelope No. 1)

Lot No. 1 : SUPPLY, DELIVERY, INSTALLATION AND COMMISSIONING OF NEW MOVEMENT AREA GUIDANCE SIGNS (MAGS) AND VARIOUS AIRFIELD LIGHTING COMPONENTS FOR SUBIC BAY METROPOLITAN AUTHORITY

QUANTITY : **1 lot**

APPROVED BUDGET FOR THE CONTRACT : Php ***56,837,749.00***

AGENCY SPECIFICATIONS	BIDDER'S STATEMENT OF COMPLIANCE
SUPPLY, DELIVERY, INSTALLATION AND COMMISSIONING OF NEW MOVEMENT AREA GUIDANCE SIGNS (MAGS) AND VARIOUS AIRFIELD LIGHTING COMPONENTS FOR SUBIC BAY METROPOLITAN AUTHORITY Conforms to the attached Scope of Works, Specifications, Terms of Reference and Drawings	
The Intended Completion Date is within Two Hundred Fifty (250) Calendar Days	
The contractor shall be responsible for work and material standard testing requirements.	

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

Name of Company	Signature Over Printed Name of Authorized Representative	Date

Note:
Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidders statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution.

Item	Specifications	State "Comply"/ "Not Comply" and indicate brand/model description/ remarks	Please cross-refer to page/tab/ index no. of attached printed (and CD format, if applicable) literatures:
A.	**NEW MOVEMENT AREA GUIDANCE SIGNS INCLUDING THE NEW MIDFIELD WIND DIRECTION INDICATOR (WDI)**		
A.1	Twenty (20) units Information Sign *(See Drawings Sheet A-3)*		
A.2	Twelve (12) units Mandatory Sign *(See Drawings Sheet A-3)*		
A.3	All signs shall be illuminated by LEDs, fully compliant with the new ICAO Annex 14 complete with:		
A.3.1	The signs shall be certified to FAA AC 150/5345-44 (latest edition) for Mechanical Properties and Frangibility.		
A.3.2	The signs shall be certified to FAA AC 150/5345-44 (latest edition) for Photometric, Chromaticity, and Wind Load to ICAO Annex 14, Vol 1.		
A.3.3	Interconnecting wires and cable assemblies with FAA L823 moulded two pole plugs or its equivalent.		
A.3.4	The signs shall have a frangible construction. The frangibility of the sign shall not lead to diminishing of capability to withstand wind and jet blast velocities.		
A.3.5	LED light fixtures; The design of the LED electronics must ensure sign lumen maintenance of 70% (L70) minimum for greater than 50,000 hours. To ensure reduced energy and maintenance requirements, the sign light source shall utilize individual Light Emitting Diodes (LED) mounted on a strip PCB with an aluminum backer to manage the heat generated by the LED junction or manufacturer's standards complying to the requirement.		
A.3.6	Necessary Interface transformers, electronics converters inverters and protective device for functions to 2.8 amps from 6.6 amps 5 steps CCR lighting circuit; the LED sign shall have an input Power Factor >0.99 as measured on the primary of the L-830 or L-831 isolation transformer		
A.3.7	The sign shall impose a low load (VA) on 3-step, 5-step or 5.5A (1-step) constant current regulator using an external mounted LED power supply contained on an IP66 minimum rated enclosure to protect components against intrusion of objects and water.		
A.3.8	The sign shall be furnished with an externally mounted on/off switch to allow maintenance personnel to isolate the sign components from the series circuit power. The on/off switch shall be located on the external power enclosure and be easily accessible and visible. Internal power cord shall be through frangible leg closest or directly to the external power supply enclosure.		
A.3.9	Front Panel, polycarbonate; To ensure maximum pilot visibility, the sign shall have a flat, vertical face that collect less dirt and shall have illumination uniformity exceeding the ICAO specification		
A.4	**High voltage series circuit cables.**		
A.4.1	5kV, 1C-8 mm² XLPE PVC sheathed Cable, 13.5-14.2mm outside diameter.		
A.4.2	Shall be laid across the existing conduits and necessary trenching/conduits shall be provided as shown in the drawing		
A.4.3	New 14mm^2 bare copper counterpoise wires shall be installed above the new high voltage series circuit cables conduit duct bank for lightning protection.		
A.4.4	Unless otherwise specified, all plug joints shall be protected by 4 layers of self -bonding tape, topped by 3 layers of PVC tape, with the exception of all connections with the secondary lead cable of the isolating transformer,		

	whose receptacle shall be joined to the plug of the light fittings.		
A.4.5	Each underground cable shall bear cable identification circuit markers for a non-corrodible material, as directed by the Engineer.		
A.5	All existing signage shall be removed including the inventory and transport to SBMA designated location within SBFZ. The high voltage series cables of Taxiway Edge Lights shall be reconnected and inspected by the SBMA Engineer upon removal of each signage.		
A.6	Information and Mandatory Signs shall be in a single circuit powered by the new one (1) unit 10kVA/kW CCR through the new high voltage series circuit cables.		
A.7	Interfacing of the new units of Constant Current Regulator (CCR) with the existing AFL Remote Control System including the necessary interconnecting cables and conduits.		
A.8	Supply and installation of new 60A circuit breaker compatible to the existing Main Distribution Panel (MDP) of Bldg. 8049 for the new CCR including the compatible power cables.		
A.9	**New 1-unit solar powered CAAP MOS 8.7.2 and 9.5 compliant *or its ICAO/FAA equivalent* Midfield Wind Direction Indicator (WDI) complete with:**		
A.9.1	New mast with pedestal with mechanism for maintenance access or equivalent.		
A.9.2	Must consist of a tapering fabric sleeve attached to a pole 6.5m above the ground.		
A.9.3	The sleeve must be 3.65m long and taper uniformly 900mm in diameter to 250mm in diameter.		
A.9.4	The wide end must be mounted on a rigid frame to keep the end of the sleeve open and attached to the pole so as to allow it to move around freely.		
A.9.5	The illumination of a wind direction indicator is to be achieved by providing floodlighting from above by means of photocell controlled four (4) 50W 240V LED lamps in either vertical elliptical industry reflectors, or round deep bowl reflectors, between 1.8 m and 2.2 m above the mid-height of the sleeve mounting, and between 1.7 m and 1.9 m radial distance from the axis of rotation of the wind sleeve **or manufacturer's standard complying to A.9**		
A.9.6	The floodlighting is to be aimed and shielded so as to: (a) not cause any glare or distraction to pilots; and (b) uniformly illuminate the maximum swept area of the wind sleeve.		
A.9.7	Provision of photo controller and grounding system		
A.9.8	Provision of circuit breaker with weather proof enclosure (NEMA Type 3) at the Wind cone mast base.		
A.9.9	Provision of 1 set of spare LED lamps and cone fabric sleeve		
A.9.10	Services and materials for the concrete pavement and paint markings as indicated in the drawings for the new WDI and new Ground Signal Area.		
A.9.11	The existing Midfield, Rw07 & 25 WDIs shall be removed including the inventory and transport to SBMA designated location within SBFZ.		
B.	**SEQUENCED FLASHING LIGHTS FOR RWY 07** Subic Bay Metropolitan Authority (SBMA) intends to procure brand new, of latest model, Sequenced Flashing Lights for Runway 07.		
B.1	**Lighting System**		
B.1.1	The Sequenced Flashing Lights shall be installed on Runway 07, consisting of ten (10) units unidirectional elevated capacitor discharged flashing lights.		
B.1.2	Sequenced Flashing Lights shall be located in existing foundations with necessary retrofitting to suite the new control box.		
B.1.3	The lights shall be flashing white lights with a flash frequency between 60 and 120 per minute.		

B.1.4	The lights shall be visible only in the direction of the approach to the runway.		
B.1.5	High intensity light fitting shall be of unidirectional elevated type in compliance with ICAO Annex 14, Vol. I, paragraph 5.3.5 and 5.3.8 or Annex 14, Vol. II, paragraph 5.3.3 / FAA L-849(AC 150/5345-51) specifications.		
B.1.6	Each fitting and supporting pole if necessary shall be of lightweight frangible construction suitable for concrete mounting base and shall be of sufficient strength to withstand aircraft engine blast.		
B.1.7	Lamp life shall be greater than 1,000 hours at maximum intensity.		
B.1.8	Light fitting shall have two micro switches one each for lamp and light fixture door.		
B.1.9	Exterior finished color of light fitting shall be yellow color.		
B.1.10	High intensity light fittings shall be installed on the top of existing Frangible pole.		
B.1.11	In elevation, the axis of the beams of the high intensity approach lights shall be set as 5.5 to 7.0 degrees. These lights shall be installed as accurately as practicable but in no case, shall the error be greater than ± 0.25 degree.		
B.2	**Power Supply Control Cabinet**		
B.2.1	The Power Supply Control Cabinet shall consist of an inner box and outer box.		
B.2.2	The Power supply outer boxes for the Sequenced Flashing Lights shall house an inner Power supply box containing the high voltage capacitor and the solid-state components assembled on Printed Circuit Boards.		
B.2.3	The outer box shall be weather proof fitted with anti-condensation heater and terminals.		
B.2.4	The inner box shall house the PCB's, Capacitors and security switch which are mounted in outer box.		
B.2.5	The inner box must be removable from the outer box for easy maintenance and troubleshooting and shall be easily replace with spare inner box.		
B.2.6	The inner box must have limit switch which will automatically shutoff once box is open.		
B.2.7	Power supply shall be 230Vac (+/- 10%), 60 Hertz.		
B.2.8	Power consumption shall be less than 230watts at maximum Brilliancy.		
B.2.9	Power factor shall be greater than 0.95, Efficiency greater than 0.8.		
B.2.10	Working Temperature shall be -25 to +55degree centigrade.		
B.3	**Power Supply System** The Sequenced Flashing Lights shall be supplied with power from the Power Substation near Rwy 07, by means of 230VAC supplied from the Equipment Distribution Panel with new Step Up & Step down 5 KVA transformer single Phase.		
B.4	**Brilliancy Control** The Runway Threshold Identification Lighting System shall be controlled in three (3) brilliancy steps of 100%, 10%, 3% of the full brilliance, by modification of existing ATC remote control desk to suit the new 3 energy Level SFL.		
B.5	**Power and Control cable**		
B.5.1	Power cable shall be 600 volts, XLPE, PVC sheathed, 3 conductors, size will depend on consumption of the light unit. New power cables shall be installed from the new step down transformer across each power supply unit of sequenced flashing light.		
B.5.2	Control cable shall be 600 volts, XLPE, PVC sheathed at least 4 pairs, size as required by equipment manufacturer. New control cables shall be		

	installed from the Glidepath 07 area across each control unit of sequenced flashing light.		
B.5.3	Existing support brackets, anchor bolts, cable eye bolts, guy wires, turn buckles, cable clip, shackles for sequenced flashing lights shall be replaced with stainless steel material. The cables shall be enclosed in a flexible conduit that can withstand years of exposure to weather and protects the cable from physical contact to the cable clip/clamp.		
C.	**CONSTANT CURRENT REGULATOR (CCR) AND CIRCUIT SELECTOR** Subic Bay Metropolitan Authority (SBMA) intends to procure brand new, of latest model, Constant Current Regulator (CCR) and Circuit Selector.		
C.1	One (1) unit 10kVA/kW minimum Constant Current Regulator (CCR) for the new MAGS and Two (2) units 5kVA/kW minimum CCR to replace the existing units for Precision Approach Path Indicator (PAPI) Lights of Runway 07 & 25		
C.1.1	Control & monitoring shall be microprocessor/microcontroller based w/ non-volatile memory (NVE)		
C.1.2	The CCR shall use a Ferroresonant core /Thyristor design (clean output sinusoidal wave form) that produces minimal EMI, high efficiency and near unity power factor for AC 150/5345-10 test conditions; The CCR shall exceed the EMI testing requirements specified in FAA AC 150/5345-10 (current edition), 6.6amp, 220/240VAC ± 10%, single phase, 60Hz ICAO compliant; Certified to FAA AC 150/5345-10 or its equivalent		
C.1.3	The CCR shall supply {one to five} brightness output levels to power the airfield lighting circuit		
C.1.4	Lightning arrester – Arresters of the proper rating to protect the CCR from lightning must be installed at the output terminals of the CCR.		
C.1.5	Back indicator and Remote control (24-60VDC)		
C.1.6	Open circuit and over current protection		
C.1.7	Earth fault detector		
C.1.8	Serial mode communication (Jbus/Modbus)		
C.1.9	Circuit breaker - An integral CCR circuit breaker shall be installed inside of the regulator and accessible with the regulator door closed		
C.1.10	Menu type keyboard		
C.1.11	Digital display of parameters		
C.1.12	Input & output electrical measurement		
C.1.13	Display in front panel		
C.1.14	CCR can be re-configured without connecting to computer		
C.1.15	Keypad in front panel		
C.1.16	The input power factor shall be at least 0.99		
C.1.17	Output accuracy: Better than ± 1%		
C.1.18	The efficiency shall be at least 95%		
C.1.19	Normal temperature: -20 °C to 55°C; Operating temperature: -40°C to +55°C		
C.1.20	Humidity: 95% max		
C.1.21	A single control board shall be used for all versions of the CCR to make troubleshooting easier and to minimize spare parts		
C.1.22	The CCR shall have output current surge limitation designed so that switching the equipment on and off, changing brightness steps, or opening/shorting the output will not produce current surges that will damage the CCR or any equipment connected to its output		

C.1.23	An integral CCR output S1cutout shall be installed inside/outside of the regulator		
C.2	**Six(6) units Circuit Selector to replace the existing two (2) units of Centerline Lights, four (4) units of Approach &Threshold lights of Rwy 07 & 25**		
C.2.1	Built-in lightning arrester		
C.2.2	For 2 circuits non simultaneous operation		
C.2.3	48VDC control voltage, single phase 230 VAC		
C.2.4	In steel wall mounted cabinet equipped with door micro switch		
C.3	**Interfacing of the new units of Constant Current Regulator (CCR) & Circuit Selectors with the existing AFL Remote Control System including the necessary interconnecting cables and conduits.**		
D.	**HIGH VOLTAGE SERIES CIRCUIT CABLES FOR PAPI LIGHTS 07 & 25** Supply and installation of new 5kV, 1C-8 mm² XLPE, PVC sheathed cables with conduits to replace the existing direct buried cables of PAPI Lights for Runway 07 & 25.		
E.	**SITE WORKS AND SYSTEM SUPPORT**		
E.1	GENERAL		
E.1.1	All works/installations shall be in accordance with the submitted OEM installation manuals and in compliance with ICAO Annex 14.		
E.1.2	In coordination with SBMA, the Contractor shall be responsible for the dismantling of the existing items & ancillaries to be replaced in this project.		
E.1.3	All dismantled items shall be transferred/transported and stored by the Contractor in a SBMA designated storage area. Inventory list of equipment dismantled shall be submitted by the Contractor to SBMA.		
E.1.4	The dismantled equipment shall be packaged in a standard wood crate designed to accommodate the equipment of each system for ready transport. A duplicate copy of the inventory list shall also be attached in front of the crate to identify its contents. Handling instructions and crate identification number shall also be provided.		
E.1.5	Prior to installation, the supplier shall provide shop drawings of the system for approval by concerned authority.		
E.1.6	Prior to substantial completion of the Works, the Contractor shall, for record purposes, prepare and submit to the Engineer for his approval as-built drawings in soft copy AutoCAD ~~9.0~~ format and hard copies with one (1) reproducible and three (3) copies. Such drawings will represent accurately the Works as constructed incorporating the effect of all Site changes, variations and instructions.		
F	**ELECTRICAL SYSTEM**		
F.1	Electrical installations shall be in accordance with the latest provisions of the Philippine Electrical Code.		
F.2	Surge and lightning protection devices shall be supplied/installed by the Contractor. The system shall be designed and rated so as not to incur damage to Equipment during occurrences of surges/lightning strikes.		
F.3	Data/Control and Power cables shall be correctly spaced to avoid interferences.		
F.4	All electrical devices installed shall be of high standard, designed and used for the purpose, UL listed or compliant to equivalent standard.		
F.5	All electrical wires shall undergo insulation testing with min 1Mohm.		
G	**GROUNDING SYSTEM**		
G.1	The Contractor shall provide new grounding systems. With considerations to local terrain, the ground resistance shall not be greater than 5 ohms.		
G.2	Ground conductor configuration shall be in accordance with the Original Equipment Manufacturer (OEM) standard specification.		

G.3	Equipment grounding shall be separate from the grounding system of the counterpoise and/or shall be in accordance with OEM standards/requirements.		
G.4	Connections to grounding rods shall be exothermic.		
H	**MAINTENANCE TOOLS**		
H.1	Supply and delivery of 1 unit luminance meter.		
H.2	Supply and delivery of 1 unit digital megger.		
H.3	Supply and delivery of 1 unit digital earth tester.		
H.4	Supply and delivery of 1 unit digital ammeter for the CCR up to 6.6A.		
H.5	Supply and delivery of 1 unit battery load tester for the airfield lighting generator set.		
H.6	Supply and delivery of 2 sets of tool box with the following minimum tools:		
H.6.1	1 set socket wrench		
H.6.2	1 set allen wrench		
H.6.3	1 set screw drivers		
H.6.4	Electrical pliers		
H.6.5	Electrical long nose pliers		
H.6.6	Electrician knife		
H.6.7	Vise grip		
H.6.8	10" Adjustable wrench		
H.6.9	1 set precision tools		
H.6.10	Mechanical plier		
H.6.11	Hammer		
H.6.12	Hack saw		
H.6.13	1 set open/close wrench		
H.6.14	Measuring tape		
H.6.15	Oil filter wrench vise style grip		
H.6.16	Calibration/Realignment Tools		
H.6.17	2-Maintenance Laptop, at least 13", 8th Gen i7, 16GB, 500GB SSD, FHD		
I	**TECHNICAL MANUALS**		
I.1	Shall have at least 2 (two) hard copies and a soft copy of the technical manuals.		
I.2	The manuals shall contain the following: (a) General and functional descriptions of the equipment; (b) Equipment installation and theory of operation (c) Preventive and corrective maintenance (d) Block diagrams and schematic diagrams, (e) Technical Specification and List of components and spare parts.		
J	**TRAINING**		
J.1	The supplier shall provide an on-site training after installation of the equipment to at least **15** technical personnel of the SBMA-SBIA.		
J.2	The training shall cover: (a) Safety Procedures and Standards; (b) Operation and Preventive Maintenance Procedures; (c) Corrective Maintenance Procedures; (d) Calibration Procedures (for CCR) and (e) Realignment Procedures for AGL		
J.3	The supplier shall be responsible for all necessary expenses of the training such as, but not limited to, training materials, meals, snacks, etc.		
J.4	The training shall only be conducted during office hours 0800H to 1700H on weekdays.		
J.5	The supplier shall issue training certificate to the trainees after completion		

	of the off-site and on-site training.		
K	**SPECIAL INSTRUCTIONS**		
	Project is VAT free. However, shipments of materials, equipment and other peripherals that are components of the project imported from abroad shall not be consigned to SBMA but to the project proponent. Nonetheless, SBMA will provide assistance to insure all components shall be free of VAT. All other tariffs and duties resulting in the shipment of the project components shall be to the account of the contractor.		

"ANNEX F"

List Of Equipment, Owned Or Leased And/Or Under Purchase Agreement, Pledged To The Proposed Contract

Business Name : _____
Business Address : _____

Description	Model/Year	Capacity/Performance/Size	Plate No.	Motor No./ Body No.	Location	Condition	Proof of Ownership/ Lessor/Vendor
A. Owned							
i.							
ii.							
iii.							
iv.							
v.							
B. Leased							
i.							
ii.							
iii.							
iv.							
v.							
C. Under Purchase Agreement							
i.							
ii.							
iii.							
iv.							
v.							

Note: This List must be supported by proof of ownership, lease and/or purchase agreement. For lease and purchase agreement, proof of ownership from the lessor or certification of availability of equipment from the vendor for the duration of the project.

Submitted by : _____
(Printed Name & Signature of Authorized Representative)

Designation : _____ Date : _____

"Annex G"

Statement Of Single Largest Completed Contract Similar To The Contract To Be Bid

(For this purpose, similar contracts shall refer to General Engineering with a contract amount of at least Twenty Eight Million Four Hundred Eighteen Thousand Eight hundred Seventy Four Pesos and Fifty Centavos (Php28,418,874.50)).

Business Name : _____
Business Address : _____

Name of Contract	a. Owner Name b. Address c. Telephone Nos.	Nature of Work	Contractor's Role		a. Amount at Award b. Amount at Completion	a. Date Awarded b. Date Completed
			Description	%		
Government						
Private						

Note: This statement shall be supported by:

1. Any of the following (Notice of Award/ Contract /Notice to Proceed); and
2. Project Owner's Certificate of Final Acceptance issued by the Owner other than the Contractor or the Constructors Performance Evaluation System (CPES) Final Rating (minimum Satisfactory Rating).

Submitted by : _____
(Printed Name & Signature of Authorized Representative)
Designation : _____
Date : _____