

**PROJECT : SUPPLY, DELIVERY AND INSTALLATION OF ONE (1) UNIT 10 KVA UPS FOR SSS INFANTA BRANCH OFFICE**  
**SUBJECT : TERMS OF REFERENCE (TOR)**

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**A. SCOPE OF WORKS**

1. Supply, delivery and installation of one (1) unit 10 KVA UPS complete with standard accessories.
2. Supply, delivery and installation of electrical material as per attached single line diagram.
3. Supply, delivery and installation of necessary materials needed to complete the project.
4. Restoration of wall/floor affected by the installation.
5. Orientation/training of end user on basic operation and trouble shooting of the unit.
6. Submission of brochure and manual.
7. Testing and commissioning

**B. SPECIFICATION**

<b>PARTICULAR</b>	<b>DESCRIPTION</b>
<b>1. Topology</b>	: On-Line Double Conversion, low frequency
<b>2. Brand</b>	: Generic
<b>3. Capacity</b>	: 10 KVA, Single Phase
<b>4. Component/Parts</b>	: The unit shall consist the following component but not limited to: <ol style="list-style-type: none"> <li>1. Rectifier/Charger</li> <li>2. Static Inverter</li> <li>3. Batteries</li> <li>4. Manual bypass with switch</li> <li>5. Monitoring and Control Panel</li> <li>6. Battery Management System</li> <li>7. Simple Network Management Protocol (Connectivity), must be compatible with the existing SNMP used by SSS.</li> <li>8. Generator set compatibility</li> </ol>
<b>5. Protection</b>	: <ol style="list-style-type: none"> <li>1. With input and output over/under voltage protection</li> <li>2. Input surge Protection</li> <li>3. Batteries over charging and discharging protection</li> <li>4. Output overload short circuit protection</li> <li>5. Temperature high protection</li> <li>6. Waterproof, Dustproof, Heat insulation</li> </ol>

**NOTE** : **In the event of failure/fault in any of the hardware component (PFC, INVERTER, CONTROLLER, POWER SUPPLY, CHARGER etc.). Other parts shall not be affected and must equip with individual internal short circuit protection.**

**6. Input Parameters**

6.1 Voltage	: 220 Vac, Single Phase
6.2 Voltage range	: 220 Vac, +/-25% ( 165 Vac to 275 Vac )
6.3 Frequency	: 60 Hertz, +/-10% ( 54 Hz to 66 Hz )
6.4 THD	: <2%

**7. Output Parameters**

7.1 Voltage	: 220 Vac, Single Phase
7.2 Voltage Distortion	: +/- 1% Stable load, +/- 5% fluctuant load
7.3 Power Factor	: 0.8 P.F
7.4 Efficiency	: > 93% at full load
7.5 Frequency	: 60 Hertz, +/-0.5% ( 59.7 Hz to 60.3 Hz)
7.6 Crest Factor	: >3:1
7.7 THD	: linear Load <3%; non-linear load <5%
7.8 Overload	: 150% for 1 Minutes
7.9 Bypass	: Automatic and Manual
7.10 DC start	: Ups shall be capable to start up even without mains

**SSS INFANTA**  
**RECD/AUTHENTICATED**  
 MARJORIE G. LOPEZ  
 Jr. Admin Asst.  
 29 APR 2021

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**8. Battery**

- 8.1 Type : Valve Regulated Lead Acid (VRLA)
- 8.2 Backup Time : Minimum of 15 Minutes at full load
- 8.3 Charging time : 90 % at 8 Hours charging

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**9. Electrical**

- 9.1 Input breaker : 1 Pcs - 50Amp, 2Pole, 230VAC , 60Hz., Bolt-on type
- 9.2 Output breaker : 1 Set - ECB 50Amp, 2 Pole, 230VAC , 60Hz., Bolt-on type w/ inclosure
- 9.3 Wires : 20 mtrs - 14.0 mm<sup>2</sup> THHN/THWN stranded wire, Lead Free
- : 10 mtrs - 8.0 mm<sup>2</sup> THHN/THWN stranded wire, Lead Free
- : 10 mtrs - 14.00 mm<sup>2</sup> royal cord 2/C
- 9.4 Conduit : 10 mtrs - Flexible metallic conduit

**C. COST ESTIMATE**

SSS BRANCH	PARTICULAR	QTY.	UNIT COST	TOTAL
1.0 SSS INFANTA	10 KVA, Uninterruptible Power Supply (UPS)	1 unit	197,569.00	197,569.00
Address: CNV Business Hub, 311 Gen. Luna St., Brgy. Poblacion 39, Infanta, Quezon				

**Approved Budget for the Contract (ABC)= 197,569.00**

**D. WARRANTY**

- One (1) Year warranty on parts and labor.

**E. FREQUENCY OF PREVENTIVE MAINTENANCE**

- The preventive maintenance will be conducted on a **QUARTERLY** basis for the one-year duration of the contract.
- For every completed quarterly preventive maintenance, the supplier must provide the BSSD a copy of an accomplished service report conforming the completed work. The report must duly signed by the designated SSS representative and by his/her immediate supervisor.

**F. PROJECT DURATION**

- 30 Calendar days upon receipt of PO/JO


**G. LIQUIDATED DAMAGES**

- Where the Supplier refuses or fails to deliver the Goods and/or to perform the Services within the period(s) specified in this Contract, inclusive of duly granted time extensions if any, the Procuring Entity shall deduct from the Contract Price, as liquidated damages, the applicable rate of one tenth (1/10) of one (1) percent of the cost of the unperformed works for every day of delay.

Prepared By:

  
**ELIZER V. MIGUEL**  
 JEA/Engineer, BSSD

Reviewed By:

  
**TEDDY N. CARREON**  
 CEO-III, BSSD

Approved By:

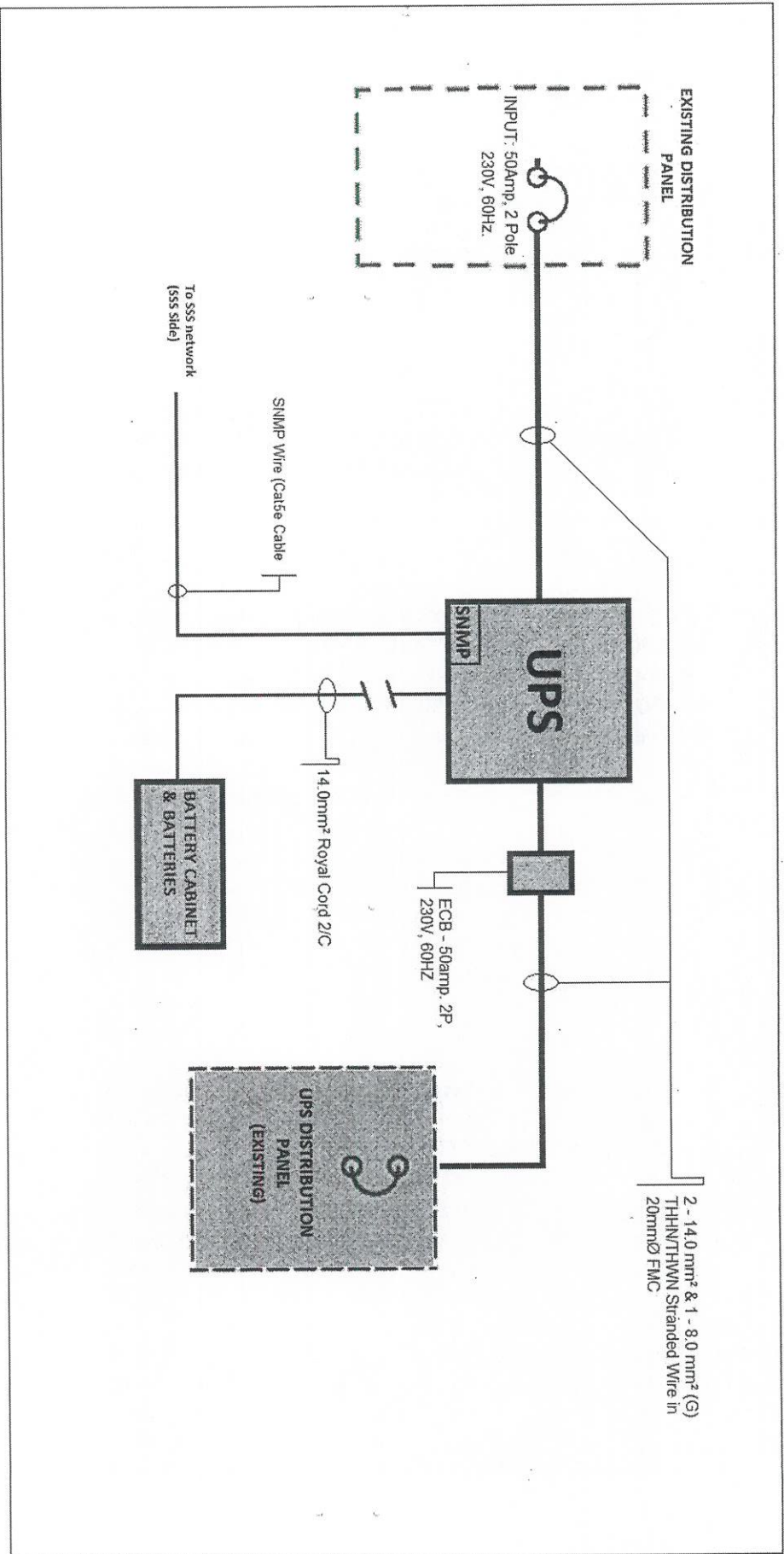
  
**ELPIDIO S. DE CHAVEZ**  
 Department Manager III, BSSD

Conforme: \_\_\_\_\_

**SSS INFANTA**  
**RECYD/AUTHENTICATED**  
  
**MARJORIE P. LOPEZ**  
 Jr. Admin Asst.  
**29 APR 2021**



PROJECT : SUPPLY, DELIVERY AND INSTALLATION OF ONE (1) UNIT 10KVA UNINTERRUPTIBLE POWER SUPPLY (UPS) FOR SSS INFANTA  
 BRANCH OFFICE  
 SUBJECT : UPS SINGLE LINE DIAGRAM



Prepared By:

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**ELIZER V. MIGUEL**  
 JEA/Engineer, BSSD

Reviewed By:

*Teddy N. Carreon*  
**TEDDY N. CARREON**  
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 29 APR 2021  
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