



**TERMS OF REFERENCE**  
**CORRECTIVE MAINTENANCE FOR THE STAND BY GENERATOR SET AT INFORMATION MANAGEMENT SERVICE (IMS) BUILDING, U.P. MANILA**

**1. BACKGROUND AND PURPOSE**

This Methodology describes the statement of work and technical requirements of a maintenance contract for the enrolled generator set unit of University of the Philippines Manila – IMS Bldg. The generator set equipment serves as an intricate mechanical infrastructure currently installed in the IMS Building along Padre Faura St., University of the Philippines Manila. The Service Provider is required to perform routine scheduled Corrective maintenance of the herein described equipment.

**1.1. Enrolled Generator Set**

The following table specifies generator fall under the contract:

<b>Generator Set</b>	
Type	Silent Type / Standby
Power Capacity	78KVA
Rated Voltage	230 V
Rated Speed	1800 RPM
Frequency	60 Hz
Phase	3 phase
Diesel Engine	Cummins
Engine Model	4BTA3.9-G2
Engine Serial	78260631

## 2. SCOPE OF WORK

### 2.1. Replacement of Parts/ Materials

The SERVICE PROVIDER shall perform scheduled Corrective Preventative Maintenance Service (CMS) on the equipment listed above. The goal of this CMS is to maintain optimum equipment performance and reduce the likelihood of unexpected failures. CMS shall be performed in accordance with the Methodology. CMS is to consist of the task-actions listed herein for each equipment type and to be performed at the frequency listed.

## 3. SCHEDULE AND DURATION OF WORK

### 3.1. Schedule of Work

Frequency: Service provider will submit the schedule and for approval of end-user

### 3.2. Duration of Work

Working lead time is not more than 12 hours starting from the time of visual inspection of the generator set. Schedule of execution shall be provided by the End-user.

## 4. METHODOLOGY

The below procedures are written to cover as much possible of needed actions to maintain these equipment in the best possible way. The SERVICE PROVIDER shall prepare and keep checklists, reports, test results and documentation properly with original copy to be submitted to University of the Philippines – Manila, IMS Bldg., Ermita Manila

### 4.1. Coordination and Site Familiarization (Included in the on-going PM service contract- DONE PM Service report provided for material/parts replacement to be executed)

4.1.1. Coordinate with the Owner's Representative.

4.1.2. Perform a walk-around inspection.

4.1.3. Familiarize the enrolled Generator Set Units through interviewing the Authorized Genset Operator about the operational condition and the Corrective Maintenance measures being performed on daily and weekly basis.

### 4.2. Pre-Execution Checks (Included in the on-going PM service contract- ONGOING)

The following operational checks will be made during PM visit in addition to the Parts and Material Replacement described below:

#### 4.2.1. Cooling System

4.2.1.1. Check the amount and condition of coolant/radiator water

4.2.1.2. Inspect worn out, broken or loose belts. Adjust if necessary

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4.2.1.3. *Check hoses for crack and brittleness*

4.2.1.4. *Check/inspect radiator fins*

4.2.2. *Fuel System*

4.2.2.1. *Check engine and supply system for any fuel leaks*

4.2.2.2. *Check fuel level and visually inspect for contamination*

4.2.2.3. *Fuel connections to be checked and retightened*

4.2.3. *Air Induction and Exhaust System*

4.2.3.1. *Inspect and clean air filter element*

4.2.3.2. *Check air filter indicators for proper operation*

4.2.3.3. *Insure that air intake flow is not unduly restricted*

4.2.3.4. *Check exhaust system for possible corrosion, bracket damage, vibration and loose connection*

4.2.4. *Lubricating Oil System*

4.2.4.1. *Check oil between the Add and Full marks on the depth stick*

4.2.4.2. *Clean crankbase breather, if necessary*

4.2.4.3. *Check engine oil level for unusual oil leakage and contamination*

4.2.5. *Starting System*

4.2.5.1. *Check and inspect starter operation, inspect loose connection*

4.2.5.2. *Check battery fluid level and verify that the battery terminals are clean.*

4.2.5.3. *Tighten all battery connections.*

4.2.5.4. *Inspect battery charger operations, record amperage reading*

4.2.6. *Control Panel*

4.2.6.1. *Visually inspect wiring or components*

4.2.6.2. *Check engine protective devices and test proper operation, if necessary.*

4.2.6.3. *Check all switches and breakers*

4.2.7. *General*

4.2.7.1. *Visually inspect loose connection and burnt wires*

4.2.7.2. *Check abnormal sound and generator vibrations*

**SCOPE OF THIS CORRECTIVE MAINTENANCE BASED ON PM INSPECTION REPORT:**

**4.3. Materials Replacement**

As per below items, the SERVICE PROVIDER shall conduct the required CMS actions:

4.3.1. After performing the above listed Pre-Execution Checks, exercise or warm-up the generator set for 5 to 10 minutes through performing Manual Start-up.

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4.3.2. During operation, record the reading of the following parameters:

- 4.3.2.1. RPM
- 4.3.2.2. Oil Pressure
- 4.3.2.3. Voltmeter Reading
- 4.3.2.4. Frequency Reading
- 4.3.2.5. Water Temperature Reading
- 4.3.2.6. Oil Temperature Reading

4.3.3. Conduct safety shut-down of generator set before performing the following replacements:

- 4.3.3.1. Replace battery
- 4.3.3.2. Install Wiring and Tapping of wire
- 4.3.3.3. Replace controller

#### ***4.4. Testing and Leakage Inspection***

- 4.4.1. Retighten all electrical terminals, hoses and fittings.
- 4.4.2. Re-adjust generator frequency, if necessary.
- 4.4.3. Check manual/automatic transfer switch for proper operation
- 4.4.4. Exercise generator and manual/automatic transfer switch
- 4.4.5. Test Run with/without load and record all parameters.
- 4.4.6. Put the generator set into Auto-mode operation.
- 4.4.7. Double check the radiator condition in running condition (if with leak)

#### ***4.5. Sanitation and Housekeeping***

- 4.5.1. Properly dispose of all waste fluid. (c/o End-user)
- 4.5.2. Clean external parts of the generator set.
- 4.5.3. Clean the generator room and remove all debris.

#### ***4.6. Turn-Over and Documentation***

- 4.6.1. Furnish Delivery Receipt and submit duly accomplished Checklist and Service Report after the Preventive Maintenance Service showing the findings and recommendation, if any (to be attested and accepted by the End-user)

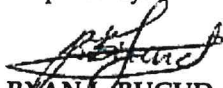
### **5. SERVICE TERMS & CONDITIONS**

#### ***5.1. Payment Term***

- 5.1.1. The UNIVERSITY shall pay the SERVICE PROVIDER the total contract price, equivalent to

One Hundred Ten Thousand Five Hundred Pesos (Php 110,500.00) after the acceptance of the Corrective Preventive Maintenance Service performed by the SERVICE PROVIDER in compliance with this agreement.

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