

SCOPE OF WORK

PROJECT TITLE : **Supply and Installation of Chiller Plant Manager System**
LOCATION : **Chiller Plant, Chancery Compound**

1. GENERAL

- a. The contractor shall furnish all required personnel, expertise, tools of trade, equipment, materials, transportation, delivery and a competent English speaking supervisor or foreman who will stay at the job site every work day throughout the progress of the project in connection with the Supply and installation of Chiller Plant Manager System (CPMS) and integration with Building Management System (BMS) including its pertinent auxiliaries and devices at Chiller Plant, Chancery Compound.

2. TECHNICAL PROVISION

- a. Supply of controllers of the chillers and gateway controller. Refer to Electronics Plan.
- b. Supply and installation of Chiller Plant Manager System Workstation. Workstation shall include operating, MS Office software that shall be used in data gathering and printing of data reports. The memory shall be capable of storing 1 Terabyte.
- c. Install Chiller Plant Manager System Software and programming.
- d. Supply of field devices and sensors (pressure sensors, flow sensors, electronic flow meters, temperature sensors, **power monitoring devices** and other devices necessary for the completion of the system). Refer to Electronics Plan.
- e. Supply and labor for the installation of roughing-in conduit and flexible liquid tight conduit for cable connection and terminations of wiring for newly installed sensors and field devices **inside the Utility building** as described in the specifications. Testing and commissioning.
- f. **Existing Differential Pressure Sensor will be utilized for new and old buildings. Sensor can accommodate 0-10v or 4-20mA.**
- g. **Existing new building uses Alerton software. Communication backbone is BACnet.**
- h. **Vendor shall provide binary values and analog value points for future BACnet integration to the Alerton software and expansion in the new building.**

3. PERSONNEL

- a. The Contractor shall provide sufficient personnel possessing the skills and knowledge to perform the work required of this project.
- b. Immediately on commencement of work, the Contractor shall assign on site a knowledgeable English speaking project supervisor who shall be responsible for the overall management and coordination of this contract, coordinate with the COR and resolve problems and with authority to act for the Contractor.

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4. QUALITY CONTROL

- a. All work shall be done in favorable weather conditions or the work shall be suitably protected from the weather.
- b. All damages inflicted on the existing surrounding structures and property resulting from the performance of this project must be repaired or restored to its original condition at the Contractor's expense.
- c. Liquidated damages of Php 7,989.35 shall be assessed for each day the work remains incomplete beyond the work deadline.
- d. The contractor shall guarantee workmanship for one (1) year determined from the date of final acceptance.

5. WORKING HOURS

- a. Working hours shall be from 0730 hours to 1630 hours, from Monday thru Friday.
- b. Request for Saturday, Sunday, holidays and other hours of work shall be submitted to the COR at least two (2) days in advance for the approval of the Security Office.

6. PROHIBITIONS

- a. Smoking is strictly prohibited at the work site. A smoking area will be assigned.
- b. Contractor's personnel are to use only proper toilet facilities. Urinating on walls, plants, trees, grass and other areas is strictly prohibited. Violator shall be permanently removed from the compound. Contractor shall provide commercial portable toilet.

7. SECURITY

- a. Contractor's personnel must stay within the working site and not wander around the adjacent areas not covered under this scope of work.
- b. Contractor's workers are prohibited to stay inside the work area after each day's work.

8. GOVERNMENT-FURNISHED MATERIALS, PROPERTY AND SERVICES

- a. Supply of differential pressure transmitters.
- b. Electric power and water required for this project shall be supplied. The Contractor is responsible for all connections and extensions to the work area.
- c. The project shall be monitored and inspected by the COR and/or his assigned project inspector upon whose approval the work will be accepted.
- d. The COR shall designate the area where the contractor can build a temporary storage and lockers space which shall be kept clean, orderly and secure at all times. Contractor's personnel are not allowed to roam around the premises during work hours or stay after each day's work.

9. CONTRACTOR-FURNISHED MATERIALS / ITEMS

- a. MATERIALS
 - i. Supply of controllers of the chillers and gateway controller.
 - ii. Supply of Chiller Plant Manager System Workstation and Software.

- iii. Supply of field devices and sensors (pressure sensors, flow sensors, electronic flow meters, temperature sensors, **power monitoring system** and other devices necessary for the completion of the system).
- iv. The contractor shall provide all labor, materials, and equipment to perform the services required in this contract.
- v. The contractor shall put up temporary barriers or yellow caution tapes to keep away people from work site.
- vi. The Contractor shall submit sample board of all materials for approval of the COR. Materials and equipment incorporated in the work shall match the approved samples.

b. **EQUIPMENT & TOOLS**

- i. The Contractor shall furnish all tools and special equipment to perform task required.

10. SPECIFIC TASKS

- a. The contractor guarantees to complete the work within **45 calendar days** from the date of Notice to Proceed.
- b. The Contractor shall and submit to the COR or GTM a "Daily Log Sheet", completed daily. Data to be reported includes data on workers by classification, the move-on and move-off of construction equipment furnished by the prime and subcontractor or furnished by the Government, and materials and equipment delivered to the site.

11. CLEANING TASKS

- a. The contractor shall continuously, during the progress of the work, remove and dispose of dirt and debris and keep work area clean, neat and orderly and in such order as to prevent safety hazards. Debris shall be collected and removed from the job-site daily.
- b. Domestic rubbish containers on the premises shall not be utilized by the Contractor for storage or disposal of construction rubbish

12. SAFETY

- a. The project safety, in all respects, is the sole responsibility of the Contractor.
- b. The Contractor shall comply with the U.S. OSHA (Occupational Safety and Health Administration) and Local Safety and Health Requirements, and shall assume full responsibility and liability for compliance with all other applicable standards and regulations pertaining to accident prevention, life, health, and safety of personnel, as well as preventing damage to materials, supplies, and equipment. The Contractor will hold the Government and its agents harmless for any action, errors, or omission on his part, his employees, or his subcontractors that result in illness, injury or death.
- c. The Contractor shall provide employees with and require the use of safety equipment, personal protective equipment and device necessary for protection.
- d. The Contractor is responsible for all injuries to his workers.