SECTION 25 3000 – BMS COMMUNICATION DEVICES

Revise this Section by deleting and inserting text to meet Project-specific requirements.

This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

Delete hidden text after this Section has been edited for the Project.

PART 1 - GENERAL

1.01   RELATED DOCUMENTS

    A.   Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

    B.   The Contractor's attention is specifically directed, but not limited, to the following documents for additional requirements:

        1.   The current version of the *Uniform General Conditions for Construction Contracts*, State of Texas, available on the web site of the Texas Facilities Commission
        2.   The University of Houston's *Supplemental General Conditions and Special Conditions for Construction.*

1.02   SUMMARY

    A.   Provide all interface devices and software to provide an integrated system connecting BCs, AACs, ASCs and Gateways to the Owner's Wide Area Network (UNIVERSITY OF HOUSTON WAN).

        1.   Local Supervisory LAN Gateways/Routers.
        2.   Chiller Controls Interface Device (CID).
        3.   Variable Frequency Drives (VFD's).

    B.   Provide all interface devices and software to provide an integrated system connecting BCs, AACs, ASCs and Gateways to the Owner's Wide Area Network (UNIVERSITY OF HOUSTON WAN).

    C.   Designated IP Address by Owner (within project budget).

Remove following two paragraphs if fire alarm and smoke control are not required.

    D.   Controllers serving fire alarm system must be rated per NFPA.

    E.   Controller serving smoke control systems must be listed per UL 864 UUKL.

1.03   REFERENCE STANDARDS

   A.   The latest published edition of a reference shall be applicable to this Project unless
        identified by a specific edition date.

   B.   All reference amendments adopted prior to the effective date of this Contract shall be
        applicable to this Project.

   C.   All materials, installation and workmanship shall comply with the applicable requirements
        and standards addressed within all references.

PART 2 - PRODUCTS

2.01   GENERAL

   D.   All materials shall meet or exceed all applicable referenced standards, federal, state and
        local requirements, and conform to codes and ordinances of authorities having jurisdiction.

2.02   LOCAL SUPERVISORY LAN GATEWAYS/ROUTERS

   E.   The Supervisory Gateway shall be a microprocessor-based communications device that acts
        as a gateway/router between the Supervisory LAN CSSs or OWS and the Primary LAN.

   F.   The Gateway shall perform information translation between the Primary LAN and the Local
        Supervisory LAN, which is 100 Mbps Ethernet TCP/IP and shall use BACnet over IP.

   G.   The gateway shall contain its own microprocessor, RAM, battery, real-time clock,
        communication ports, and power supply as specified for a BC in Section 25 1400 "BMS Field
        Panels." Each gateway/router shall be mounted in a lockable enclosure unless it is a PC that
        also serves as an OWS.

   H.   The gateway/router shall allow centralized overall system supervision, operator interface,
        management report generation, alarm annunciation, acquisition of trend data, and
        communication with control units. It shall allow system operators to perform the following
        functions from the CSS, OWSs, and POTs:

        1.   Configure systems.
        2.   Monitor and supervise control of all points.
        3.   Change control setpoints.
        4.   Override input values.
        5.   Override output values.
        6.   Enter programmed start/stop time schedules.
        7.   View and acknowledge alarms and messages.
        8.   Receive, store and display trend logs and management reports.
        9.   Upload/Download programs, databases, etc. as specified.

   I.   Upon loss of power to the Gateway, the battery shall provide for minimum 50 hour backup
        of all programs and data in RAM.

J.   The Gateway shall be transparent to control functions and shall not be required to control information routing on the Primary LAN.

2.03   Chiller Controls Interface Device (CID)

K.   The CID shall be a microprocessor-based communications device that acts as a gateway between the control protocol and the applicable chiller controller.

L.   The CID shall contain its own microprocessor, RAM, battery, communication ports and, power supply.

M.   Each CID shall support full bi-directional communications translation as more fully specified in Section 25 1500 "BMS Software and Programming".

N.   The following points shall be mapped as a minimum:

1.   CHW Supply and Return Temperatures.
2.   CW Supply and Return Temperatures.
3.   Power Consumption (kW).
4.   Percent of Power Consumption (compared to maximum).
5.   Bearing Temperature.
6.   Suction and Head Pressures.
7.   Suction and Head Temperatures.
8.   All available alarms; common alarm as minimum.
9.   Chiller Status.
10. Enable/Disable.
11. Current Limit Percent.
12. CHW Setpoint and Setpoint Reset.

PART 3 - EXECUTION

3.01   PREPARATION

A.   Examine areas and conditions under which control systems are to be installed. Do not proceed with Work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.02   INSTALLATION

A.   Installation shall meet or exceed all applicable federal, state and local requirements, referenced standards and conform to codes and ordinances of authorities having jurisdiction.

B.   All installation shall be in accordance with manufacturer's published recommendations.

C.   Provide all interface devices and software to provide an integrated system.

D.   Closely coordinate with the owner, or designated representative, to establish IP addresses and communications to assure proper operation of the building management system with owner's wan.

E.   Closely coordinate with Owner's commissioning agent and TAB firm.

END OF SECTION 25 3000