SECTION 28 25 15
CLOCK SYSTEMS

PART 1 - GENERAL

1.1 SECTION SUMMARY

A. Work covered by this Section includes providing a Code Blue elapsed time system within each operating room.

B. Battery clocks noted on the Drawings are not covered by this Section.

C. Work shall be complete, National Recognized Testing Labatory (NRTL – i.e. Underwriters Laboratory [UL]) Listed and Labeled; tested, certified and ready for operation.

1.2 RELATED SECTIONS

A. 01 33 23 – Shop Drawings, Product Data and Samples.

B. 07 84 00 – Firestopping.

C. 27 05 11 - Common Work Results For Low Voltage Systems.

E. 27 05 33 – Raceways and Boxes for Communications Systems.

1.3 REFERENCES

A. The installation shall comply fully with all governing authorities, laws and ordinances, regulations, codes and standards, including, but not limited to:

1. United States National Codes:

a. American Institute of Architects (AIA): Guidelines for Healthcare Facilities.

B. NFPA:

1) 70 - National Electrical Code (current date of issue) – Articles 517, 645 & 800.

3. State Hospital Code(s).

4. Local Town, City and/or County Codes.

1.5 QUALIFICATIONS

A. The OEM shall have had experience with three (3) or more installations of systems of comparable size and complexity with regards to type and design as specified herein. Each of these installations shall have performed satisfactorily for at least one (1) year after final acceptance by the user. Include the names, locations and point of contact for these installations as a part of the submittal.

B. The Contractor shall submit certified documentation that they have been an authorized distributor and service organization for the OEM for a minimum of five (5) years. The Contractor shall be authorized by the OEM to pass thru the OEM’s warranty of the installed equipment to VA.

In addition, the OEM and Contractor shall accept complete responsibility for the design, installation, certification, operation, and physical support for the System. This documentation, along with the System Contractor and OEM certifications must be provided in writing as part of the Contractor's Technical submittal.

C. The Contractor's Communications Technicians assigned to the System shall be fully trained, qualified, and certified by the OEM on the engineering, installation, operation, and testing of the System. The Contractor shall provide formal written evidence of current OEM certification(s) for the installer(s) as a part of the submittal or to the RE before being allowed to commence work on the System.

D. The Contractor shall display all applicable national, state and local licenses.

E. The Contractor shall submit copy (s) of Certificate of successful completion of OEM's installation/training school for installing technicians of the System's PA equipment being proposed.

1.6 CODES AND PERMITS

A. Provide all necessary permits and schedule all inspections as identified in the contract's milestone chart, so that the system is proof of performance tested and ready for operation on a date directed by the Owner.

B. The contractor is responsible to adhere to all codes described herein and associated contractual, state and local codes.

C. The Contractor shall display all applicable national, state and local licenses and permits.

1.6 SUBSTITUTIONS

A. Proposed substitutions, to be considered, shall be manufactured of equivalent materials that meet or exceed specified requirements of this Section.

B. Proposed substitutions shall be identified not less than 10 days prior to bid date.

C. The manufacturer of the proposed substitutions shall be a company specializing in Code Blue elapsed time systems and have documented experience manufacturing such systems for at least four (4) years.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Furnish and install a complete and fully functional elapsed timer system as shown on the drawings and specified herein.

2.2 SUBMITTALS

A. Product Data: Submit complete catalog data for each component, describing physical characteristics and method of installation. Submit brochure showing available colors and finishes.

B. Manufacturer's Instructions: Submit complete installation, set-up and maintenance instructions.

2.3 MANUFACTURERS

A. The products specified shall be new, FCC and UL Listed, labeled and produced by OEM of record.

B. Provide products from Primex Wireless or approved equal.

2.4 PRODUCTS

A. GENERAL: The furnished equipment shall comply with applicable regulatory requirements. Furnished equipment shall be the manufacturer’s latest model(s); and shall not cause harmful interference with any medical equipment and operate properly with other interference associated with the facility.

B. Elapsed Time Clocks

1. UL, ETL, stainless steel cover, flush mount or surface-mount with slope bracket as selected by surgery staff, with cord/plug or cord/pigtail coordinated with associated electrical rough-in.
2. Final configurations and options shall be selected by the RE and surgical staff at the time of Bid. Options include the following:
   a. Power: 120V or PoE. Drawings show 120V at each unit.
   b. Time Signal: Provide a clock time signal to each unit by either a PoE time packet via IT data drop or by an option system antenna. The Drawings show a network data drop.
   c. Code Event Recording: Manual (XS series) or software based recording (SNS series). Software/maintenance package will be purchased under separate funding as needed.
   d. Mounting: Flush or surface mount with option angle bracket. Bid as flush mount since that cost will cover either option.
3. Provide an elapsed time clock system with the following features:

a. Highly visible 7-segment LED digits
b. 12 or 24 hour time display
c. Alternating time and date display option
d. Beep option; 3KHz ± 0.5KHz frequency
e. LED dimmer option
f. Power outage memory backup for up to 10 hours
g. Audible Tone Option: Configured as directed by surgery staff.
h. Code Blue input range: 5-120VAC or DC.

4. Timer features shall include:
   a. 6-digit counters
   b. Up Counter, with a range of 00:00:00 to 99:59:59.
   c. Down Counter with a range of 99:59:59 to 00:00:00.
   d. Code Blue Mode, immediately starts counting up from 00:00:00, with visual indicator, with background display of other counts and/or last Code Blue event.
   e. Start times can be preset by user.
5. Control unit, flush wall mount, stainless steel cover, shall include three (3) control buttons labeled as follows:
   a. Display / Exit
   b. Stop/Start / Increment
   c. Reset / Set/Change
6. Include a means to provide a national time protocol signal to each Code Blue digital clock unit to display local time while not in xx.
   a. Include a IT Cat6 cable drop at each clock location for providing time packets via Ethernet.
   b. Provide an antenna to provide RF time signals to each clock.
7. Unit shall be flush mount. Where directed by RE, include a surface mount model with either 4-degree or 18-degree slope brackets as selected by the RE/surgery staff.
8. Contractor shall include interface to local Nurse Call Code Blue, along with required relays and other ancillary devices for a complete system.
9. Provide Primex Code Blue Digital Timer, SNS or XS-Series as approved by RE or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General

1. Execute work in accordance with National, State and local codes, regulations and ordinances.
2. Install work neatly, plumb and square and in a manner consistent with standard industry practice. Carefully protect work from dust, paint and moisture as dictated by site conditions. The Contractor will be fully responsible for protection of his work during the construction phase up until final acceptance by the Owner.
3. Install equipment according to OEM's recommendations. Provide any hardware, adaptors, brackets, rack mount kits or other accessories recommended by OEM for correct assembly and installation.
4. Secure equipment firmly in place, including equipment, clocks, system cables, etc.
5. Locate clocks and equipment as shown on drawings, with minor changes as directed and approved by RE.
6. Install clocks at the locations indicated, plumb, level and flush or tight against the wall for surface mount clocks.

3.2 ELASPED TIMER SYSTEM

A. Install the clock unit and controls per manufacturer instructions.
B. Connect each unit to receive local Code Blue signals from the Nurse Call System.
C. Contractor shall configure the Code Blue Digital Elapsed Timer controls for normal state, set state and Code Blue state as directed by Resident Engineer.

3.3 FIREPROOFING

A. Where system wiring and conduit penetrate fire rated walls, floors and ceilings, fireproof the opening per Section "Fireproofing".
B. Provide conduit sleeves where cables penetrate fire rated walls ceilings if alternative raceways are not available.

PART 4 – TESTING

4.0 SYSTEM TESTING / GUARANTEE

A. General Requirements: The scope of work for this Section does not warrant staff training, nor a special guarantee beyond the standard manufacturer's guarantee associated with the products installed. Provide the Resident Engineer warranty documentation for each product installed under this Section. Replace any defective clocks as required.
B. Acceptance Test Procedure:

1. Physical and Mechanical Inspection:
   a. The Resident Engineer/Architect/Engineer will tour all areas where the Clock systems were installed to insure they are operationally ready for proof of performance testing.
   b. The System diagrams, record drawings, equipment manuals, Auto CAD Disks, intermediate, and pretest results shall be formally inventoried and reviewed.
   c. Failure of the System to meet the installation requirements of this specification shall be grounds for terminating all testing.
2. Operational Test:
   a. After the Physical and Mechanical Inspection, conduct operational tests to assure proper reception of signal at each clock.

C. Training: Allow up to two (2) hours for training, demonstration and instructions to select staff members.

- - - E N D - - -