LOUISIANA DEPARTMENT OF PUBLIC SAFETY
SUPPORT SERVICES WAREHOUSE
FIRE ALARM CONTROL PANEL REPLACEMENT
SPECIFICATIONS

PART 1 GENERAL

1.1 DESCRIPTION

A. This specification includes furnishing, installing, connecting, and testing of a new fire alarm control panel (FACP), including Underwriters Laboratories (UL) listed application software and hardware complete and ready for operation. The scope of work shall include the complete re-programming and certification of the entire system. All required programming information is the responsibility of the contractor.

B. This is a one-for-one replacement of the existing fire alarm control panel. Removal of the old panel is required. Its removal should be accomplished with minimal damage to existing sheetrock. Customer will repair and paint sheetrock. All existing fire alarm equipment shall be connected to the new panel resulting in a complete and operational system. A current inventory of devices is provided below, according to annual inspection reports. Its accuracy and completeness is not guaranteed in this document. The contractor will be provided access to the building to verify the equipment list, if desired.

4	NAC auxiliary power supplies complete with backup batteries
88	Horn strobes
114	Strobes
14	Photoelectric smoke detectors
35	Manual pull stations
14	Duct detectors
1	Fire pump
4	Sprinkler risers

C. This system shall include full onsite warranty for one year from Fire Marshal acceptance including all required first year testing and inspections. System shall also include required IP dialers, etc. as necessary for off-site 24-hour monitoring.

D. Regarding Fire Marshal submittals, customer has various blueprints, but none of the fire alarm system. Include all costs to reproduce drawings as necessary to provide necessary submittals.

E. The system shall comply with requirements of NFPA Standard No. 72.

1.2 SCOPE

A. A UL listed FACP shall be installed in accordance to the project specifications, and all equipment shall be provided to make it a UL listed fire alarm monitoring system.
B. The system shall be electrically supervised and monitor the integrity of all conductors.

1.3 SUBMITTALS

A. General

1. One copy of all submittals shall be submitted to the customer for review.
2. All references to manufacturer's model numbers and other pertinent information herein are intended to establish minimum standards of performance, function and quality.
3. Equivalent compatible equipment (UL listed) from other manufacturers may be considered as a substitution for the specified equipment as long as the minimum standards are met.
4. Substitute equipment proposed as equal to the equipment specified herein shall meet or exceed the minimum specified standard. For equipment other than that specified, the contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.

B. Shop Drawings

1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.

C. Manuals

1. Submit complete operating manuals.
2. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system.

1.4 GUARANTY

A. All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance. The full cost of maintenance, labor and materials required to correct any defect during this one-year period shall be included in the submittal bid.

PART 2 PRODUCTS

2.1 GENERAL

A. The FACP is to replace an Edwards EST2 FACP, and it must communicate with the existing devices and equipment.

B. Substitute equipment proposed as equal to the equipment specified herein shall meet or exceed the minimum specified standard. For equipment other than that specified, the

contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.

C. All equipment and components shall be new, and the manufacturer's current model.

2.2 MAIN FIRE ALARM CONTROL PANEL OR NETWORK NODE:

A. The main FACP Central Console shall be an Edwards Model EST3X. The panel shall communicate with and control all devices that are currently installed.

B. In conjunction with intelligent Loop Control Modules and Loop Expander Modules, the main FACP shall perform the following functions:

1. Supervise and monitor all intelligent addressable detectors and monitor modules connected to the system for normal, trouble and alarm conditions.
2. Supervise all initiating signaling and notification circuits throughout the facility by way of connection to addressable monitor and control modules.
3. Detect the activation of any initiating device and the location of the alarm condition. Operate all notification appliances and auxiliary devices as programmed.
4. Visually and audibly annunciate any trouble, supervisory, security or alarm condition on operator's terminals, panel display, and annunciators.

C. Central Processing Unit

1. The Central Processing Unit shall communicate with, monitor, and control all other modules within the control panel. Removal, disconnection or failure of any control panel module shall be detected and reported to the system display by the Central Processing Unit.
2. The Central Processing Unit shall also provide a real-time clock for time annotation of all system events. The time-of-day and date shall not be lost if system primary and secondary power supplies fail.
3. The CPU shall be capable of being programmed on site without requiring the use of any external programming equipment. Systems that require the use of external programmers or change of EPROMs are not acceptable.
4. Each peripheral device connected to the CPU shall be continuously scanned for proper operation. Data transmissions between the CPU and peripheral devices shall be reliable and error free.

D. Display

1. The system display shall provide all the controls and indicators used by the system operator and may also be used to program all system operational parameters.

E. Loop (Signaling Line Circuit) Control Module:

1. The Loop Control Module shall contain its own microprocessor and shall be capable of operating in a local/degrade mode.
2. The Loop Control Module shall provide power and communicate with all intelligent addressable detectors and modules on a single pair of wires.
3. The Signaling Line Circuit (SLC) interface board shall receive analog or digital information from all intelligent detectors and shall process this information to

determine whether normal, alarm, or trouble conditions exist for that particular device. Each SLC Loop shall be isolated and equipped to annunciate an Earth Fault condition. The SLC interface board software shall include software to automatically detect and warn of the accumulation of dust in each detector. The analog information may also be used for automatic detector testing and the automatic determination of detector maintenance requirements.

F. Enclosures:

1. The control panel shall be housed in a UL-listed cabinet suitable for surface or semi-flush mounting. The cabinet and front shall be corrosion protected, given a rust-resistant prime coat, and manufacturer's standard finish.
2. The back box and door shall be constructed of steel with provisions for electrical conduit connections into the sides and top.
3. The door shall provide a key lock and include a transparent opening for viewing all indicators.
4. The control unit shall be modular in structure for ease of installation, maintenance, and future expansion.

G. Power Supply:

1. The Addressable Main Power Supply shall operate on 120/240 VAC, 50/60 Hz, and shall provide all necessary power for the FACP.
2. The Addressable Main Power Supply shall provide the required power to the CPU using a switching 24 VDC regulator and shall incorporate a battery charger for 24 hours of standby power using dual-rate charging techniques for fast battery recharge.
3. The Addressable Main Power Supply shall provide a battery charger for 24 hours of standby using dual-rate charging techniques for fast battery recharge. The supply shall be capable of charging batteries within a 48-hour period.
4. The Addressable Main Power Supply shall provide a very low frequency sweep earth detect circuit, capable of detecting earth faults.

H. System Circuit Supervision

1. The FACP shall supervise all circuits to intelligent devices, transponders, annunciators and peripheral equipment and annunciate loss of communication with these devices. The CPU shall continuously scan above devices for proper system operation and upon loss of response from a device shall sound an audible trouble, indicate which device or devices are not responding and print the information in the history buffer.
2. Transponders that lose communication with the CPU shall sound an audible trouble and light an LED indicating loss of communications.
3. Sprinkler system valves, standpipe control valves, PIV, and main gate valves shall be supervised for off-normal position.

I. Controls with associated LED Indicators:

1. Speaker Switches/Indicators

a. The speaker circuit control switches/indicators shall include visual indication of active and trouble status for each speaker circuit in the system.
b. The speaker circuit control panel shall include switches to manually activate or deactivate each speaker circuit in the system.

J. Field Programming

1. The system shall be programmable, configurable and expandable in the field without the need for special tools, laptop computers, or other electronic interface equipment. There shall be no firmware changes required to field modify the system time, point information, equations, or annunciator programming/information.
2. It shall be possible to program through the standard FACP controller all system functions.
3. All field defined programs shall be stored in non-volatile memory.

K. Specific System Operations

1. The FACP shall support audible and silent walktest modes.

L. System Point Operations:

1. Any addressable device in the system shall have the capability to be enabled or disabled through the system keypad.
2. System output points shall be capable of being turned on or off from the system keypad.
3. System Status Reports: Upon command from an operator of the system, a status report will be generated listing all system statuses:
4. System History Recording and Reporting: The fire alarm control panel shall contain a history buffer that will be capable of storing up to 100 system events. Each of these events will be stored, with time and date stamp, until an operator requests that the contents be either displayed or printed. The contents of the history buffer may be manually reviewed; one event at a time, and the actual number of activations may also be displayed. History events shall include all alarms, troubles, operator actions, and programming entries.
5. The history buffer shall use non-volatile memory.
6. Automatic Detector Maintenance Alert: The fire alarm control panel shall automatically interrogate each intelligent system detector and shall analyze the detector responses over a period of time.
7. If any intelligent detector in the system responds with a reading that is below or above normal limits, then the system will enter the trouble mode, and the particular Intelligent Detector will be annunciated on the system display. This feature shall in no way inhibit the receipt of alarm conditions in the system, nor shall it require any special hardware, special tools or computer expertise to perform.
8. The system shall include the ability (programmable) to indicate a "pre-alarm" condition. This will be used to alert maintenance personal when a detector is at 80% of its alarm threshold in a 60-second period.

2.3 BATTERIES AND EXTERNAL CHARGER:

A. Battery:

1. Shall be 12 volt, Gell-Cell type.
2. Battery shall have sufficient capacity to power the fire alarm system for not less than twenty-four hours plus 5 minutes of alarm upon a normal AC power failure.
3. The batteries are to be completely maintenance free. No liquids are required. Fluid level checks refilling, spills and leakage shall not be required.

B. External Battery Charger:

1. Shall be completely automatic, with constant potential charger maintaining the battery fully charged under all service conditions. Charger shall operate from a 120/240-volt 50/60 hertz source.
2. Shall be rated for fully charging a completely discharged battery within 48 hours while simultaneously supplying any loads connected to the battery.
3. Shall have protection to prevent discharge through the charger.
4. Shall have protection for overloads and short circuits on both AC and DC sides.

PART 3 EXECUTION

3.1 GENERAL

A. All equipment and components shall be installed in strict compliance with manufacturers' recommendations. Consult the manufacturer's installation manuals for all wiring & fiber optic diagrams, schematics, physical equipment sizes, etc., before beginning system installation.

3.2 SYSTEM SETUP & CONFIGURATION

A. Provide the services of a factory trained and authorized technician to perform all system software modifications, upgrades or changes.

B. The factory trained technician shall install initial data at each workstation including:

1. Distribution of monitoring, control and security profiles as requested by owner.
2. Screen titles; each addressable device will have a location description in English.

3.3 FINAL INSPECTION

A. At the final inspection a factory trained technician shall demonstrate that the system functions properly in every respect.

3.4 INSTRUCTION/TRAINING

A. Provide instruction as required for operating the system. Hands on demonstrations of the operation of all system components and the entire system including user-level program changes and functions shall be provided.

END