SECTION 142871 - ELEVATOR EMERGENCY OPERATION AND EMERGENCY SIGNAL DEVICES

1. GENERAL
   * + 1. SYSTEM DESCRIPTION
          1. The elevator emergency operation and emergency signal devices enable elevators to be operated under fire or other emergency condition.

Fill in blank space in paragraph below. Indicate where the phone will report. Delete underline before entering information.

* + - * 1. Passengers in elevator cars may communicate with the \_\_\_\_\_\_\_\_\_via a hands free auto-dialer telephone system.

Verify ASME A17.1 Code Requirements before specifying the items in paragraph below.

* + - * 1. The elevator mechanic/emergency personnel may communicate with each elevator car via the machine room phone system or the master base station at the designated landing.
        2. Phase I - Firefighters Emergency Operation: A three position (reset, off, on) key operated switch at the designated floor enables elevators controlled by the switch to be secured under fire or other emergency conditions:

Operation of Phase I Firefighters Emergency Operation shall be in accordance with ASME A17.1 Rule 2.27.3.

* + - * 1. Phase II - Emergency In-Car Operation: A three position (off, hold, on) key operated switch in or adjacent to each car operating panel becomes effective only when the Phase I switch has been turned to the “on” position or a smoke detector has been activated.

Operation of Phase II - Emergency In-Car Operation shall be in accordance with ASME A17.1 Rule 2.27.3.3.

* + - * 1. Failure of A.C. operating power to normal elevator lighting fixtures automatically causes a battery powered emergency light to illuminate.
        2. Failure of A.C. operating power to alarm bell automatically causes bell to operate from battery source when emergency call button is pushed.
        3. Passengers in a stalled elevator can determine car location by referring to floor numbers on the hoistway door and on the walls of the elevator shaft.

Modify the emergency power operation of the elevators in paragraph below as required. Change “standby generator” in paragraph below to appropriate source.

* + - * 1. Upon failure of normal electric service to the elevators, an emergency electric service (standby generator) powers the elevators on a limited, priority basis. Sequence of operation:

Edit subparagraph below as required by actual project conditions.

Upon transfer to emergency power, the elevator dispatch controller receives a signal from the automatic transfer switch and activates the emergency dispatching function; One elevator at a time per group will be dispatched automatically, sequentially to the designated floor lobby. At no time shall more than one elevator be operational. A manual selector switch at the designated floor allows emergency personnel to override the automatic sequencing during the emergency stand-by power mode. Upon restoration of normal power, the automatic transfer switch sends a pre transfer signal to the elevator dispatch controller and the elevators stop one at a time at the nearest floor and revert to normal operation. If the automatic dispatching function was overridden via the manual selector switch in the designated floor dispatch panel the manual station must be reset to the automatic position and the elevators will revert to normal operation mode.

Confirm with Electrical Designer if paragraph below is required.

* + - 1. RELATED ITEMS FURNISHED BY OTHERS AND INSTALLED UNDER THIS SECTION
         1. Public address speakers and backbox for each elevator cab.

1. PRODUCTS
   * + 1. PHASE I AND PHASE II OPERATION
          1. Phase I and Phase II Switches:

FEO National standard key.

Key Change Removal:

Phase I Switch: Key change removable only in the “off and on” position.

Phase II Switch: Key change removable in the “off and hold” position.

* + - * 1. Identification of Emergency Controls: Label switches and buttons used for Phase I and Phase II operation as required by the ASME A17.1 Code.
        2. Audible and Visual Signal Devices:

Audible Signal Devices: May be horns, buzzers or bells, particularly suited for the type of alarm to be sounded.

Visual Signal Devices: Illuminating jewel in Phase I station and flashing firemen’s cap in cab as required per ASME A17.1.

Label the audible and visual signal devices with engraved nameplates, minimum 1/4” high lettering stating function of the device.

* + - * 1. Smoke Detection System: Smoke detection, associated control panel and wiring will be provided by the Electrical Contractor, including a terminal strip cabinet in the elevator machine room. Final electrical connections between terminal strip cabinet and the elevator controllers by Elevator Contractor. Coordinate all voltage and contact requirements.
      1. EMERGENCY LIGHT AND ALARM SYSTEM
         1. Light and Alarm Unit, having:

Minimum of 2 lamps. (Not less than 0.2 foot candles 4 feet above car floor and l foot in front of car station).

Six inch alarm bell. (Operated by emergency alarm button located in car operating panel).

Sealed nickel cadmium type batteries of capacity to maintain light intensity for minimum of 4 hours, and ring the 6 inch alarm bells for 1 hour. Two bells shall be provided, one mid point in the hoistway and one in the hoistway at the designated floor.

Battery charger as recommended by manufacturer.

* + - 1. PROCEDURE SIGN
         1. Instructions for the operation of the elevators under Phase I and Phase II conditions:

Locate instructional signage adjacent to the designated floor Phase I key switch engraved in hall station faceplate. Locate engraved red epoxy filled instructional signage in the car operating panel adjacent to the Phase II switches.

Lettering not less than 1/4” in height.

* + - 1. TELEPHONE COMMUNICATION SYSTEM
         1. In-Car Telephone:

Rath Microtech smartphone model 2100 or approved equal. Mount auto dialer telephone behind main car operating panel faceplate within prescribed height of controls. Coordinate mounting studs, visual indicator, speaker perforations and activation button locations with telephone manufacturer.

* + - * 1. Machine Room Telephone:

Rath Microtech Model No. 2300-630RC or approved equal. Provides two-way communication to each individual elevator car.

Review ASME A17.1 code requirements before using paragraph below.

* + - * 1. Master Base Station:

Rath Microtech Model No. 2500-28RCF or approved equal. Provides two-way communication to each individual elevator car.

* + - * 1. Distribution Module/Power Supply:

Rath Microtech distribution module and RP7700104 power supply with battery back- up.

* + - * 1. Telephone Lines: Wiring from the telephone interconnection cabinet to the machine room telephone modular phone jacks shall be provided by the Facility.
      1. EMERGENCY IDENTIFICATION SIGNAGE
         1. The driving machinery, disconnect switch, controller, transformer, car operating panel, lobbies and crosshead of each elevator shall be identified with corresponding numbers as shown on plans. In addition, a warning sign shall be mounted on disconnect switches of multiple elevators and read as follows: “Warning - Parts of the control panel are not de-energized by this switch.”
         2. Numerals and signage shall be a minimum of a 2 inches high and applied with paint or nameplate. (Exception: Car operating panel lettering shall be 1/2 inch high engraved).
         3. Each elevator entrance of each elevator shall contain elevator identification to be engraved with contrasting letters/numbers on to a metal plate having two inch high letters. The plate shall be installed over each entrance, either on transom or wall surface.

Use article below if required by the client.

* + - 1. VOICE ANNOUNCER
         1. Voice Synthesizer:

Operation: Produces speech in pleasant, natural sounding female voice from vocabulary stored in memory.

Features:

Audible Device: Voice announcer, microprocessor based equipment.

Speaker: 8 ohms. Mount speaker in car operating panel.

Speed: Variable, adjustable to speed of car.

Power Supply: As required for supply voltage.

Volume Control: Adjustable.

Vocabulary: Programmable, stating:

Floor arrival announcement and direction of travel.

Special Emergency Service (Phase I Key Switch Turned On): Announces “This elevator is needed for an emergency. Please exit when the doors open.”

* + - 1. EMERGENCY ELECTRIC SERVICE ACCESSORIES
         1. Manual Selector Switch for Selective Operation of Elevators: Located at designated floor.

Enclosure: Lockable, recessed, to match decor. Equip with illuminating “Emergency Power” signal which illuminates during periods of emergency power.

Operation: Interlocked strip switch. One of the buttons shall be labeled “Auto” and shall be the default position for the automatic sequencing operation. The remaining buttons shall be interlocked so that not more than one button may be depressed at any time. The “Auto” button shall not be able to be depressed while any of the other buttons are depressed. If the “Auto” button is depressed the remaining buttons will return to their normal position simultaneously.

Key: FEO National Standard.

Label switch with red epoxy filled characters.

* + - * 1. Automatic Operation for Selective Operation of Elevators:

Equip controllers with necessary relays and wiring for automatic operation of one elevator at a time under emergency power. Equip dispatch controllers with signaling provisions and corresponding logic to communicate with other dispatch controllers in the building. Control wiring from automatic transfer switch to machine room shall be provided by the Electrical Contractor.

Equip the elevator controllers for all elevators with provisions and circuitry to allow the elevators to operate at a field adjustable reduced speed while under periods of emergency power.

* + - 1. PUBLIC ADDRESS SYSTEM
         1. Public Address Speakers: Provide all elevators with mounting devices and wiring to each cab from hoistway junction box for installation of public address speakers. (sSpeakers fFurnished by others).

Travel cable and wiring specified under Section 142881.

1. EXECUTION
   * + 1. INSTALLATION
          1. Phase I and Phase II Operation:

Integrate components with elevator controller system for required operation.

The phase I key switch shall be located at the designated floor.

* + - * 1. Emergency Light and Alarm System:

Recess emergency light fixture in operating panel of cab. Reinforce cutout in car panel for mounting of fixture.

Install wiring, relays, contacts as required to connect emergency light unit to 120 volt power source on car, and to inter-connect the six inch alarm bell on emergency light unit with emergency call button and emergency stop button in car operating panel. In addition; provide interconnections to existing alarm bell located at the designated floor for each group of elevators.

Test battery capacity and recharge time. Operate one unit for required number of hours and load conditions.

* + - * 1. Telephone Communication System:

Install the system in accordance with the Company’s printed instructions.

* + - * 1. Floor Numbers:

Paint minimum four inch high white gloss enamel numerals on the hoistway side of each hoistway door panel

* + - * 1. Emergency Electric Service:

Mount strip switch for emergency power operation at the designated floor.

Integrate components with elevator controller system for required operation.

END OF SECTION 142871