2007 ASME SAFETY CODE A17.1 FOR ELEVATORS AND ESCALATORS

Section 2.27.3 – 2.29.1

2.27.3 Firefighters' Emergency Operation: Automatic Elevators Firefighters' Emergency Operation shall apply to all automatic elevators except where the hoistway or a portion thereof is not required to be fire-resistive construction
(see 2.1.1.1), the rise does not exceed 2000 mm (80 in.), and the hoistway does not penetrate a floor.
NOTE (2.27.3): When the structure (building, etc.) is located in a flood hazard area, the alternate and designated levels (see 8.12.1) should be above the base flood elevation.

2.27.3.1 Phase I Emergency Recall Operation

2.27.3.1.1 A three-position key-operated switch that will not change position without a deliberate action by the user, shall be
(a) provided only at the designated level for each single elevator or for each group of elevators.
(b) labeled "FIRE RECALL" and its positions marked "RESET," "OFF," and "ON" (in that order), with the "OFF" position as the center position. The "FIRE RECALL" letters shall be a minimum of 5 mm (0.25 in.) high in red or a color contrasting with a red background.
(c) located in the lobby within sight of the elevator or all elevators in that group and shall be readily accessible.
2.27.3.1.2 An additional key-operated "FIRE RECALL" switch, with two positions that will not change position without a deliberate action by the user, marked "OFF" and "ON" (in that order), shall be permitted only at the building fire control station.
2.27.3.1.3 The switch(es) shall be rotated clockwise to go from the "RESET" (designated level switch only), to "OFF" to "ON" positions. Keys shall be removable only in the "OFF" and "ON" positions.
2.27.3.1.4 Only the "FIRE RECALL" switch(es) or fire alarm initiating device located at floors that

are served by the elevator, or in the hoistway, or in an elevator machine room, or a control space, or a control room (see 2.27.3.2) shall initiate Phase I Emergency Recall Operation.

2.27.3.1.5 All "FIRE RECALL" switches shall be provided with an illuminated visual signal to indicate when Phase I Emergency Recall Operation is in effect.

2.27.3.1.6 When a "FIRE RECALL" switch is in the "ON" position all cars controlled by the switch shall operate as follows:

(a) A car traveling towards the designated level shall continue nonstop to the designated level and power-operated doors shall open and remain open.

On cars with two entrances, if both entrances can be opened at the designated level, only the doors serving the lobby where the "FIRE RECALL" switch is located

shall open and remain open.

(b) A car traveling away from the designated level shall reverse at or before the next available landing without opening its doors and proceed to designated level.

(c) A stopped car shall have the in-car stop switch (see 2.26.2.21) and the emergency stop switch in the car (see 2.26.2.5) when provided, rendered inoperative as soon as the car moves away from the landing. A moving car shall have the in-car stop switch and the emergency stop switch in the car when provided, rendered inoperative without delay. Once the emergency stop switch in the car and the in-car stop switch have been rendered inoperative, they shall remain inoperative while the car is on Phase I Emergency Recall Operation. All other stop switches required by 2.26.2 shall remain operative.

(d) A car standing at a landing other than the designated level, with the doors open and the in-car stop switch and the emergency stop switch in the car when

provided, in the run position, shall conform to the following:

(1) Elevators having automatic power-operated horizontally sliding doors shall close the doors without delay and proceed to the designated level.

(2) Elevators having power-operated vertically sliding doors provided with automatic or momentary pressure closing operation shall have the closing

sequence initiated without delay in accordance with 2.13.2.4, and the car shall proceed to the

designated level.

(3) Elevators having power-operated doors provided with continuous pressure closing operation (see 2.13.3.2), or elevators having manual doors, shall be provided with a visual and audible signal system [see 2.27.3.1.6(h)] to alert an operator to close the doors and shall, when the doors are closed, proceed to the designated level. Sequence operation, if provided, shall remain effective.

(e) Door reopening devices for power-operated doors that are sensitive to smoke or flame shall be rendered inoperative without delay. Door reopening devices not sensitive to smoke or flame (e.g., mechanically actuated

devices) are permitted to remain operative.

(1) Door closing for power-operated horizontally sliding doors shall conform to 2.13.5. (2) Door closing for power-operated vertically sliding doors shall conform to 2.13.6.1.2 and shall have an average closing car door or gate speed not to exceed 0.20 mls (0.67 ft/s).

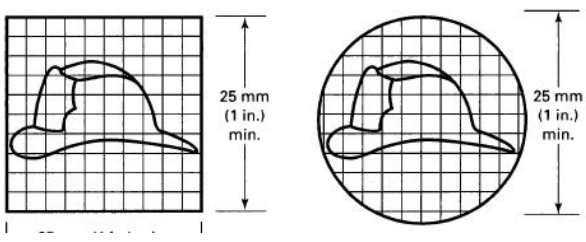
(f) All car and corridor call buttons shall be rendered inoperative. All call-registered lights and directional lanterns shall be extinguished and remain inoperative. Car position indicators, where provided, shall remain operative.

Where provided, landing position indicators shall be extinguished and remain inoperative, except at the designated level and the building fire control station, where they shall remain operative.

(g) Where provided on elevators with vertically sliding doors, corridor door open and door close buttons shall remain operative.

Fig. 2.27 .3.1.6(h) Visual Signal

Fig. 2.27.3.1.6(h) Visual Signal



(h) An illuminated visual and audible signal system
shall be activated. The visual signal shall be one of the symbols shown in Fig. 2.27.3.1.6(h) and located on the car-operating panel. The entire circular or square area or the outline of the hat, or the outline of the area shown in Fig. 2.27.3.1.6(h) shall be illuminated. The visual signal shall remain activated until the car is restored to automatic operation. When the door is open, the audible signal shall remain active until the door is closed. When the door is closed, the audible signal shall remain active for a minimum of 5 seconds. The audible signal shall not be active when the car is at the recall level.

(i) A car stopped at a landing shall have the in-car door open button(s) rendered inoperative as soon as the car moves away from the landing. The in-car door open button(s) shall remain inoperative when a car stops to reverse direction. Once the in-car door open button(s) has been rendered inoperative, it shall remain inoperative until the car has returned to the designated level.

(j) Where an additional "FIRE RECALL" switch is provided, both "FIRE RECALL" switches shall be in the "ON" position to recall the elevator to the designated level if the elevator was recalled to the alternate level (see 2.27.3.2.4).

(k) To remove the elevator(s) from Phase I Emergency
Recall Operation, the "FIRE RECALL" switch shall be rotated first to the "RESET," and then to the "OFF" position, provided that

(1) the additional two-position "FIRE RECALL" switch, where provided, is in the "OFF" position

(2) no fire alarm initiating device is activated (see 2.27.3.2).

(l) Means used to remove elevators from normal operation
shall not prevent Phase I Emergency Recall Operation, except

(1) as specified in this Code

(2) as controlled by elevator personnel

(m) No device, that measures load, shall prevent operation of the elevator at or below the capacity and loading required in 2.16.

(n) If the normal power supply, emergency power supply, and standby power supply are not available and the elevator is equipped with an alternate source of power that is insufficient to move the car to the recall level, the following requirements shall apply:

(1) The visual signal [2.27.3.1.6(h)] shall extinguish.

(2) A car that is not at a landing shall move to the closest landing it is capable of reaching.

(3) A car that has automatic power-operated horizontally sliding doors or power-operated vertically sliding doors provided with automatic closing operation and is stopped at a landing, shall open the doors, and then within 15 seconds, initiate reclosing.

(4) A car that is stopped at a landing shall have its door open button operative.

(5) A car stopped at a landing shall not move until normal power, emergency power, or standby power becomes available.

2.27.3.2 Phase I Emergency Recall Operation by Fire Alarm Initiating Devices

2.27.3.2.1 In jurisdictions not enforcing the NBCC, fire alarm initiating devices used to initiate Phase I Emergency Recall Operation shall be installed in conformance with the requirements of NFPA 72, and shall be located

(a) at each floor served by the elevator

(b) in the associated elevator machine room, control space, or control room

(c) in the elevator hoistway, when sprinklers are located in those hoistways

2.27.3.2.2 In jurisdictions enforcing the NBCC, smoke detectors, or, if applicable, the building fire alarm system (fire alarm initiating devices), used to initiate Phase I Emergency Recall Operation, shall be installed in conformance with the requirements of the NBCC, and shall be located in

(a) each elevator lobby

(b) the machine room

NOTE (2.27.3.2.2): Fire alarm initiating devices are referred to as fire detectors in the NBCC.

2.27.3.2.3 Phase I Emergency Recall Operation to the designated level shall conform to the following:

(a) The activation of a fire alarm initiating device specified in 2.27.3.2.1 or 2.27.3.2.2(a) at any floor, other than at the designated level, shall cause all elevators that serve that floor, and any associated elevator of a group automatic operation, to be returned nonstop to the designated level.

(b) The activation of a fire alarm initiating device specified in 2.27.3.2.1(b) or 2.27.3.2.2(b) shall

cause all elevators having any equipment located in that machine room, and any associated elevators of a group automatic operation, to be returned nonstop to the designated level. If the machine room is located at the designated level, the elevator(s) shall be returned nonstop to the alternate level.

(c) In jurisdictions not enforcing NBCC, the activation of a fire alarm initiating device specified in 2.27.3.2.1(c) or in jurisdictions enforcing NBCC, the initiation of a fire detector in the hoistway shall cause all elevators having any equipment in that hoistway, and any associated elevators of a group automatic operation, to be returned nonstop to the designated level, except that initiating device(s) installed at or below the lowest landing of recall shall cause the car to be sent to the upper recall level.

(d) The Phase I Emergency Recall Operation to the designated level shall conform to 2.27.3.1.6(a) through (n).

2.27.3.2.4 Phase I Emergency Recall Operation to an alternate level (see 1.3) shall conform to the following:

(a) the activation of a fire alarm initiating device specified in 2.27.3.2.1(a) or 2.27.3.2.2(b) that is located at the designated level, shall cause all elevators serving that level to be recalled to an alternate level, unless Phase I Emergency Recall is in effect

(b) the requirements of 2.27.3.1.6(f), (j), (m), and (n)

(c) the requirements of 2.27.3.1.6(a), (b), (c), (d), (e),

(g), (h), (i), (k), and (1), except that all references to the "designated level" shall be replaced with "alternate level"

2.27.3.2.5 The recall level shall be determined by the first activated fire alarm initiating device for that group (see 2.27.3.2.1 or 2.27.3.2.2).

If the car(s) is recalled to the designated level by the "FIRE RECALL" switch(es) [see also 2.27.3.1.6(j)], the recall level shall remain the designated level.

2.27.3.2.6 When a fire alarm initiating device in the machine room, control space, control room, or hoistway initiates Phase I Emergency Recall Operation,

as required by 2.27.3.2.3 or 2.27.3.2.4, the visual signal [see 2.27.3.1.6(h) and Fig. 2.27.3.1.6(h)] shall illuminate intermittently only in a car(s) with equipment in that machine room, control space, control room, or hoistway.

2.27.3.3 Phase II Emergency In-Car Operation. A three-position ("OFF," "HOLD," and "ON," in that order) key-operated switch that will not change position without a deliberate action by the user, shall be labeled "FIRE OPERATION"; provided in an operating panel in each car; and shall be readily accessible. The label "FIRE OPERATION" lettering shall be a minimum of 5 mm (0.25 in.) high in red or a color contrasting with a red background. It shall become effective only when Phase I Emergency Recall Operation is in effect and the car has been returned to the recall level. The switch shall be rotated clockwise to go from "OFF" to "HOLD" to "ON."

The key shall only be removable in the "OFF" and "HOLD" position. For elevators with power-operated doors, the "OFF," "HOLD," and "ON" positions shall not change the mode of operation within Phase II Emergency In-Car Operation until the car is at a landing with the doors in the normal open position, except as required by 2.27.3.3.4 and **2.27.3.4.** The three modes of operation within Phase II In-Car Operation ("OFF," "HOLD," and "ON") are specified by 2.27.3.3.1 through **2.27.3.3.4.** For elevators with manual doors, after the car and hoistway doors have been opened at least once at the recall level, the "OFF," "HOLD," and "ON" positions shall then change the mode of operation in accordance with 2.27.3.3.1 through 2.27.3.3.4.

2.27.3.3.1 When the "FIRE OPERATION" switch is in the "ON" position, the elevator shall be on Phase II Emergency In-Car Operation, for use by emergency personnel only, and the elevator shall operate as follows:

(a) The elevator shall be operable only by a person in the car.

(b) The car shall not respond to landing calls. Directional lanterns, where provided, shall remain inoperative.

Car position indicators, where provided, shall remain operative. Landing position indicators, where provided, shall remain inoperative, except at the designated level and the building fire control station, where they shall remain operative.

(c) Door open and close buttons shall be provided for power-operated doors only and located

as required by 2.27.3.3.7. Buttons shall be a minimum of 19 mm (0.75 in.) in the smallest dimension. The door open and door close buttons shall be labeled "OPEN" and "CLOSE" and when applicable "REAR OPEN" and "REAR CLOSE" or "SIDE OPEN" and "SIDE CLOSE" in lettering a minimum of 5 mm (0.25 in.) in height with a contrasting background. The labeling shall be on or adjacent to the buttons. Requirement 2.26.12 does not apply to these buttons. The door open and close buttons shall be operative when the elevator is stopped within an unlocking zone .

(d) The opening of power-operated doors shall be controlled only by a continuous-pressure door open button.

If the button is released prior to the doors reaching the normal open position, the doors shall automatically reclose. Requirements 2.13.3.3, 2.13.3.4, 2.13.4.2.1(b)(2), and 2.13.4.2.1(c) do not apply. All door open button(s)

in the car shall be operational. On cars with multiple entrances, if more than one

entrance can be opened at the same landing, separate door open buttons shall be provided for each entrance in conformance with 2.27.3.3.7.

(e) Open power-operated doors shall be closed only by continuous pressure on the door close button. If the button is released prior to the doors reaching the fully closed position, horizontally sliding doors shall automatically reopen, and vertically sliding doors shall automatically stop or stop and reopen. Where provided, additional door close button(s) in the car shall be operational.

On cars with multiple entrances, if more than one entrance can be opened at the same landing, a separate door close button shall be provided for each entrance

in conformance with 2.27.3.3.7.

(f) Opening and closing of power-operated car doors or gates that are opposite manual swing or manual slide hoistway doors shall conform to 2.27.3.3.1(d) and (e).

(g) All door reopening devices, except the door open button(s), shall be rendered inoperative. Full-speed closing shall be permitted.

Landing door opening and closing buttons, where provided, shall be rendered inoperative.

(h) Every car shall be provided with a button labeled "CALL CANCEL," located as required in

2.27.3.3.7, that shall be effective during Phase II Emergency In-Car Operation. When activated, all registered calls shall be canceled and a traveling car shall stop at or before the next available landing. The button shall be a minimum of 19 mm (0.75 in.) in the smallest dimension. Button labeling shall be in lettering a minimum of 5 mm (0.25 in.) in height with a contrasting background. The labeling shall be on or adjacent to the button.

(i) Floor selection means shall be provided in the car to permit travel to all landings served by the car, and shall be operative at all times, except as in 2.27.3.3.2 and 8.12.1. Means to prevent the operation of the floor selection means or door-operating buttons shall be rendered inoperative. The floor selection means shall be operable without the use of keys, cards, tools, or special knowledge. The floor selection means shall be permitted to be located behind the locked cover specified in 2.27.3.3.7, only if floor selection means for all landings served are included behind the locked cover. Where buttons not accessible to the public are provided they shall be a minimum of 19 mm (0.75 in.) in the smallest dimension.

(j) A traveling car shall stop at the next available landing for which a car call was registered. When a car stops at a landing, all registered car calls shall be canceled.

(k) Means used to remove elevators from normal operation shall not prevent Phase II Emergency In-Car Operation, except

(1) as specified in this Code

(2) as controlled by elevator personnel

(l) No device, that measures load, shall prevent operation of the elevator at or below the capacity and loading required in 2.16.

(m) Every car shall be provided with a switch, conforming to the requirements of 2.26.2.33 and located as required in 2.27.3.3.7. When the switch is in the "STOP" position, all registered calls shall be canceled and power shall be removed from the elevator driving-machine motor and brake. When the switch is moved to the "RUN" position from the "STOP" position, the car shall not move, except for leveling, until a call is entered. If the type of switch used is a button, it shall be a minimum of 19 mm (0.75 in.) in the smallest dimension.

NOTE [2.27.3.3.1(m)]: This requirement does not limit the firefighters' stop switch to a specific style of switch. Toggle switches and push/pull buttons are two possible styles. A switch, if

provided, should be operable to the "STOP" position by a firefighter wearing protective gloves (see NFPA 1971).

(n) If the normal power supply, emergency power supply, and standby power supply are not available and the elevator is equipped with an alternate source of power that is insufficient to move the car to all landings, the requirements of 2.27.3.1.6(n)(1) through (5) shall apply.

2.27.3.3.2 For elevators with power-operated doors, when the car is at a landing, with the doors open, and the "FIRE OPERATION" switch is in the "HOLD"
position, the car shall remain at the landing with the doors open. The door close buttons shall be inoperative, and car calls shall not be registered. For elevators with manual doors, when the car is at a landing and the "FIRE OPERATION" switch is in the "HOLD" position, the car shall remain at the landing and car calls shall not be registered.

2.27.3.3.3 When the car is at a landing other than the recall level, with the doors in the normal open position, and the "FIRE OPERATION" switch is in the "OFF" position, power-operated doors shall operate as follows:

(a) Horizontal sliding doors shall close automatically. All door reopening devices shall remain inoperative. Door open buttons in the car shall remain operative.

Full-speed closing is permitted. If the "FIRE OPERATION" switch is turned to the "ON" or "HOLD" position prior to the completion of door closing, the doors shall reopen.

(b) Elevators having vertically sliding doors shall have corridor "DOOR OPEN" and "DOOR CLOSE" buttons rendered operative. All door reopening devices shall remain inoperative. Door closing shall be in accordance with 2.27.3.3.1(e). Full-speed closing is permitted.

If the "FIRE OPERATION" switch is turned to the "ON" or "HOLD" position prior to the completion of door closing, the doors shall reopen. 2.27.3.3.4 When the doors are in the closed position and the "FIRE OPERATION" switch is placed in
the "OFF" position, the car shall return to the recall level in conformance with 2.27.3.1.6(a) through (n) and 2.27.3.2.5.

2.27.3.3.5 Elevators shall be removed from Phase II Emergency In-Car Operation only when the "FIRE OPERATION" switch is in the "OFF" position and the car is at the designated level and the doors are in the normal open position.

2.27.3.3.6 The occurrence of an accidental ground or short circuit in elevator electrical equipment located on the landing side of the hoistway enclosure
and in associated wiring, as a result of exposure to water, shall not disable Phase II Emergency In-Car Operation once it has been activated.

(a) 2.27.3.3.7 The "FIRE OPERATION" switch (2.27.3.3), the "CALL CANCEL" button [2.27.3.3.1(h)], the "STOP" switch [2.27.3.3.1(m)], the door open button(
s), the door close button(s), the additional visual signal (2.27.3.3.8), and the operating instructions shown in Fig. 2.27.7.2 shall be grouped together at the top of a main car operating panel behind a locked cover.

The fire department communication system phone jack shall be permitted to be installed in the firefighters' operation panel. No other equipment shall be permitted in the firefighters' operation panel. The firefighters' operation panel cover shall be openable by the same key that operates the "FIRE OPERATION" switch. The cover shall be permitted to open automatically when the car is on Phase I Emergency Recall Operation and at the recall level. When the key is in the "FIRE OPERATION" switch, the cover shall not be capable of being closed. When closed, the cover shall be self-locking. Where rear or side doors are provided, buttons for the front, rear, or side doors shall be provided in the firefighters' operation panel. The door open and door close buttons for the rear entrance (where provided) shall be labeled "REAR OPEN" and "REAR CLOSE."

The door open and door close buttons for the side entrance (where provided) shall be labeled "SIDE OPEN" and "SIDE CLOSE."

2.27.3.3.8 An additional visual signal shall be provided and located as required by 2.27.3.3.7. The additional visual signal shall be one of the symbols shown in Fig. 2.27.3.1.6(h). The entire circular or square area shown in Fig. 2.27.3.1.6(h) shall be illuminated. This additional visual signal shall be activated whenever the visual signal in 2.27.3.1.6(h) is activated.

2.27.3.4 Interruption of Power. Upon the resumption of power (normal, emergency, or standby), the car shall be permitted to move to reestablish absolute car position. Restoration of electrical power following a power interruption shall not cause any elevator to be removed from Phase I Emergency Recall Operation or Phase II Emergency In-Car Operation. The failure

and subsequent restoration of electrical power (normal, emergency, or standby) shall not cause any elevator to be removed from Phase I Emergency Operation or Phase II Emergency In-Car Operation.

(a) Elevators on Phase I Emergency Operation shall be permitted to move only to the next floor in the direction of the recall level to reestablish absolute car position prior to conforming to 2.27.3.1 and 2.27.3.2.

(b) Elevators on Phase IT Emergency In-Car Operation with the key in the "OFF" position shall be permitted to move only to the next floor in the direction of the recall level to reestablish absolute car position prior to conforming to 2.27.3.3.3 and 2.27.3.3.4. If the key is moved to the "ON" or "HOLD" position before the doors are fully closed, 2.27.3.4(c) or (d) shall apply, and automatic power-operated doors shall open if in a level zone.

(c) Elevators on Phase II Emergency In-Car Operation with the key in the "HOLD" position shall not move, except for leveling within a leveling zone. Automatic power-operated doors shall open if the doors are not fully closed and the car is in a level zone.

(d) Elevators on Phase II Emergency In-Car Operation with the key in the "ON" position shall not move, except for leveling within a leveling zone, until a car call is entered. Automatic power-operated doors shall not move until a door open or close button is pressed; after which they shall conform to 2.27.3.3.1(d) and (e). After a car call is entered, the car shall be permitted to move only to the next floor in the direction of the recall level to reestablish absolute car position prior to answering car calls.

2.27.3.5 Multi-compartment Elevators. Multi-compartment elevators shall also conform to 2.27.3.5.1 through 2.27.3.5.4.

2.27.3.5.1 The "FIRE RECALL" switch (2.27.3.1) shall be located at the designated level served by the upper compartment.

2.27.3.5.2 The "FIRE OPERATION" switch (see 2.27.3.3) shall be located in the upper compartment.

2.27.3.5.3 A means to display the entire floor area in the lower compartment shall be located in the upper compartment. The means shall display the lowercompartment only when Phase I and Phase II is in effect.

2.27.3.5.4 A switch labeled "LOWER CAR LOCKOUT" with two positions marked "OFF" and "ON" shall be located behind the firefighters' operation panel cover (see 2.27.3.3.7).

NOTE (2.27.3.5.4): The switch should be operable by a firefighter wearing protective gloves (see NFPA 1971).

(a) The "LOWER CAR LOCKOUT" switch shall only be functional when Phase II is in effect.

(b) When placed in the "ON" position, the "LOWER CAR LOCKOUT" switch shall

(1) disable all door reopening devices in the lower compartment, and

(2) initiate closing of the lower compartment doors in accordance with 2.13.4.2.1(c).

(c) When the car is stopped at a landing and the "LOWER CAR LOCKOUT" switch is in the "OFF" position, the lower compartment doors shall be opened.

2.27.4 Firefighters' Emergency Operation: No-nautomatic Elevators

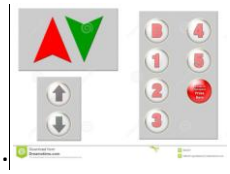
Firefighters' Emergency Operation shall apply to all Non-automatic elevators, except as follows:

(a) where the hoistway or a portion thereof is not required to be fire-resistive construction (see 2.1.1.1), the rise does not exceed 2 000 mm (80 in.), and the hoistway does not penetrate a floor

(b) in jurisdictions enforcing the NBCC where the NBCC does not require Firefighters' Emergency Operation

(c) where Firefighters' Emergency Operation is provided voluntarily these requirements shall also apply

2.27.4.1 Phase I Emergency Recall Operation. A three-position key-operated switch shall be provided at the designated level for each single elevator or for each group of elevators. The three-position switch shall be labeled "FIRE RECALL" and its positions marked "RESET," "OFF," and "ON" (in that order), with the "OFF" position as the center position. The "FIRE RECALL" letters shall be a minimum of 5 mm (0.25 in.) high in red or a color contrasting with a red background. The three-position switch shall be located in the lobby within sight of the elevator or all elevators in that group and shall be readily accessible.



An additional "FIRE RECALL" switch with two-positions, "OFF" and "ON" (in that order), shall be

permitted only at the building fire control station.

The switch(es) shall be rotated clockwise to go from the "RESET" (designated level switch only), to the "OFF" and to the "ON" positions. All keys shall be removable only in the "OFF" and "ON" positions. Only the "FIRE RECALL" switch(es) or fire alarm initiating devices located at floors that are served by the elevator, in the hoistway, or in an elevator machine room, or a control space, or a control room (see 2.27.3.2) shall initiate Phase I Emergency Recall Operation.

All "FIRE RECALL" switches shall be provided with an illuminated visual signal to indicate when Phase I Emergency Recall Operation is in effect. When all switches are in the "OFF" position, normal elevator service shall be in effect and the fire alarm initiating devices required by 2.27.4.2 shall be operative. When a "FIRE RECALL" switch is in the "ON" position, a visual and audible signal shall be provided to alert the attendant to return nonstop to the designated or alternate level. The visual signal shall read "FIRE RECALL - RETURN TO __ " [insert level to which the car should be returned (the designated or alternate level)]. The signal system shall be activated when Phase I Emergency Recall Operation is in effect. Where an additional "FIRE RECALL" switch is provided, both "FIRE RECALL" switches must be in the "ON" position to recall the elevator to the designated level if the elevator was recalled to the alternate level.

Where an additional "FIRE RECALL" switch is provided, it shall not affect the visual signal if the designated level fire alarm initiating device (see 2.27.3.2.4) has been activated.

To extinguish the audible and visual signals, the "FIRE RECALL" switch shall be rotated first to the "RESET" and then to the "OFF" position, provided that (a) the additional two-position "FIRE RECALL" switch, where provided, is in the "OFF" position

(b) no fire alarm initiating device is activated (see also 2.27.3.2.4) No device, that measures load, shall prevent operation of the elevator at or below the capacity and loading required in 2.16.

2.27.4.2 Phase I Emergency Recall Operation by Fire Alarm Initiating Devices. Fire alarm initiating devices shall be installed at each floor served by the elevator,

and in the associated machine room, control space, or control room, and elevator hoistway, in compliance with the requirements in NFPA 72 or NBCC, whichever is applicable (see Part 9). In jurisdictions enforcing the NBCC, compliance with 2.27.4.2 is not required where the NBCC

specifies manual Emergency Recall operations only.

Phase I Emergency Recall Operation, conforming to 2.27.4.1, shall be initiated when any Phase I Emergency Recall Operation fire alarm initiating device at the elevator lobbies, machine room, control space, control room, or hoistway is activated.

Phase I Emergency Recall Operation, when initiated by a Phase I Emergency Recall Operation fire alarm initiating device, shall be maintained until canceled by moving the "FIRE RECALL" switch to the "RESET" position. When a fire alarm initiating device in the machine room, control space, control room, or hoistway initiates Phase I Emergency Recall Operation as required by 2.27.3.2.3 or 2.27.3.2.4, the visual signal [see 2.27.3.1.6(h) and Fig. 2.27.3.1.6(h)] shall illuminate intermittently only in a car(s) with equipment in that machine room, control space, control room, or hoistway.

2.27.5 Firefighters' Emergency Operation: Automatic Elevators With Designated-Attendant Operation

2.27.5.1 When designated-attendant operation is not in effect, elevators shall conform to 2.27.3.

2.27.5.2 When operated by a designated attendant in the car, except hospital service:

(a) elevators parked at the recall level shall conform to 2.27.3 without delay; elevators parked at a floor other than the recall level shall conform to 2.27.3.1.6(h). At the completion of a time delay of not less than 10 s and not more than 30 s, elevators parked at a floor away from the recall level shall conform to 2.27.3.

(b) A moving car shall conform to 2.27.3. 2.27.6 Firefighters' Emergency Operation: Inspection Operation When an elevator that is provided with firefighters' service is on inspection operation (see 2.26.1.4 and

2.26.1.5) or when the hoistway access switch(es) has been enabled [see 2.12.7.3.3(a)], a continuous audible signal, audible at the location where the operation is activated shall sound when the "FIRE RECALL" switch(es) (see 2.27.3.1) is in the "ON" position or when the fire alarm initiating device (see 2.27.3.2) is activated to alert the operator of an emergency. The car shall remain under the control of the operator until removed from inspection operation or hoistway access operation. Inspection operation or hoistway access operation shall take precedence over

Phase I Emergency Recall Operation and Phase II Emergency In-Car Operation.

2.27.7 Firefighters' Emergency Operation: Operating Procedures

2.27.7.1 Instructions for operation of elevators under Phase I Emergency Recall Operation shall be incorporated with or adjacent to the "FIRE RECALL"
switch at the designated level. The instructions shall include only the wording shown in Fig. 2.27.7.1.

2.27.7.2 A sign containing instructions for operation of elevators under Phase II Emergency In-Car Operation shall be incorporated with or adjacent to the switch in each car and shall be visible only when the cover (2.27.3.3.7) is open.

2.27.7.4 In jurisdictions that enforce the NBCC, a symbol showing a red firefighters' hat on a contrasting background, as shown in Fig. 2.27.3.1.6(h) (figure not to scale), shall be used exclusively to identify elevators that comply with 2.27.3 and additional NBCC requirements. This identification shall be located on the elevator entrance frame or adjacent to it at each emergency recall level. The identification on the entrance frame, or adjacent
to it, shall be a minimum of 50 mm (2 in.) in height.

2.27.8 Switch Keys

The key switches required by 2.27.2 through 2.27.5 for all elevators in a building shall be operable by the FEO-K1 key. The keys shall be Group 3 Security (see 8.1). A separate key shall be provided for each switch. These keys shall be kept on the premises in a location readily accessible to firefighters and emergency personnel, but not where they are available to the public. This key shall be of a tubular, 7 pin, style 137 construction and shall have a bitting code of 6143521 starting at the tab sequenced clockwise as viewed from the barrel end of the key. The key shall be coded "FEO-K1." The possession of the "FEO-K1" key shall be limited to elevator personnel, emergency personnel, elevator equipment manufacturers, and authorized personnel during checking of Firefighters' Emergency Operation (see 8.1 and 8.6.11.1). Where provided, a lock box, including its lock and other components, shall conform to the requirements of UL 1037 (see Part 9).

NOTE (2.27.8): Local authorities may specify additional requirements for a uniform keyed lock box and its location to contain the necessary keys.

2.27.9 Elevator Corridor Call Station Pictograph: When the building code requires a sign be posted adjacent to hall call fixtures instructing occupants not to use the elevator in case of fire, the sign shown in Fig. 2.27.9 shall be provided. The sign shall include only the wording and graphics shown in Fig. 2.27.9. When the building code specifies a different design, 2.27.9 shall not apply.

SECTION 2.28

LAYOUT DRAWINGS

2.28.1 Information Required on Layout Drawings

Elevator layout drawings shall, in addition to other data, indicate the following:

(a) the maximum bracket spacing (see 2.23)

(b) the estimated maximum vertical forces on the guide rails on application of the safety or other retarding device (see 2.23 and 2.19.3)

(c) in the case of freight elevators for Class B or C loading (see 2.16.2.2), the horizontal forces on the guiderail faces during loading and unloading, and the estimated maximum horizontal forces in a post-wise direction on the guide-rail faces on the application of the safety device (see 2.23)

(d) the size and linear weight kg/m (lb/ft) of any rail reinforcement, where provided (see 2.23).

(e) the total static and impact loads imposed on machinery and sheave beams, supports, and floors or foundations (see 2.9)

(f) the impact load on buffer supports due to buffer engagement at the maximum permissible speed and load (see 8.2.3)

(g) where compensation tie-down is applied (see 2.21.4.2), the load on the compensation tie-down supports

(h) the total static and dynamic loads from the governor, ropes, and tension system

(i) the horizontal forces on the building structure stipulated by 2.11.11.8 and 2.11.11.9

SECTION 2.29

IDENTIFICATION

2.29.1 Identification of Equipment

In buildings with more than one elevator, each elevator in the building shall be assigned a

unique alphabetical or numerical identification, a minimum of 50 mm
(2 in.) in height unless otherwise specified. The identification shall be painted on, engraved, or securely attached to

(a) the driving machine

(b) MG set

(d) car door or gate electric contacts; or car door interlocks

(e) hinged car platform sill electric contacts

(f) in-car stop switch, where required by 2.26.2.21