

BULLETIN 2008-002-BU/EL

Revised August 6, 2015

AUTOMATIC EMERGENCY RECALL OF ELEVATORS

The intent of this bulletin is to provide clarification and to establish the consistent requirements for the automatic emergency recall operation of elevators mandated by the Vancouver Building By-law (VBBL) (No. 10908); and for the purpose of the CSA B44 standard “Safety Code for Elevators and Escalators” referenced by the VBBL.

BACKGROUND

Article 3.2.6.4. of Division B of the VBBL mandates the automatic emergency recall for elevators. If a fire alarm system is installed, Clauses 3.2.4.12.(1)(g) and (h) of the VBBL require the installation of smoke detectors in elevator machine rooms; and in each floor area in front of elevator(s) where required by Sentence 3.2.6.4.(5) for the purpose of the automatic emergency recall of elevators. Where the smoke detectors installed in the floor area in front of elevator(s) are activated on the recall level, Sentence 3.2.6.4.(6) requires that the automatic emergency recall signal must automatically direct the elevator(s) to an alternate floor level; and actuation of smoke detectors installed in the elevator machine rooms must recall the elevators served by the elevator machine room in which the smoke detector is installed, in conformance with Sentence 3.2.4.12.(4). As mandated by Sentence 3.2.6.4.(7), smoke detectors provided in accordance with Sentence (5) must be designed as part of the building fire alarm system (FAS).

CSA B44 standard includes Firefighters’ Emergency Operation requirements for automatic elevators. Subsection 2.27.3 “Firefighters’ Emergency Operation: Automatic Elevators” describes the Firefighters’ Emergency Operation shall apply to all automatic elevators - with exceptions. As described by Subparagraph 2.27.3.1.4, only the 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. Subparagraph 2.27.3.2.2 states fire alarm initiating devices are referred to as fire detectors in the NBCC. Subparagraph 2.27.3.2.3 contains requirements of Phase I Emergency Recall Operation to the designated level by the activation of a fire alarm initiating device specified in Paragraph 2.27.3.2 for each elevator lobby and the machine room. If the elevator machine room is located at the designated level and such room is used in connection with the operation of elevator(s), the activation of a fire alarm initiating device located in this machine room must cause automatic operation for the associated elevator(s) to be returned nonstop to the alternate level.

Clause 3.2.6.4.(5)(b) of the VBBL mandates the automatic emergency recall must also be provided by the building fire alarm system. In the B44, if the building has a fire alarm system, the standard requires the FAS to be used to initiate Phase I Emergency Recall Operation. This means that actuation of a fire detector in the elevator lobbies, in the machine rooms, and in the elevator hoistways must initiate the elevator recall operation through the building fire alarm system. Fire detectors located elsewhere in the building must not initiate the elevator recall.

TECHNICAL INSTALLATION REQUIREMENTS

1. For a new building other than a high building, if a fire alarm system is provided or is required by the VBBL, the FAS must be used in the automatic emergency recall operation of the elevators.
2. For a new or an existing high building, a fire alarm system must be used in the automatic emergency recall operation of the elevators.
3. Notwithstanding Item 2, for an existing high building in which an existing fire alarm system cannot be adapted for the emergency operation of the modernized elevators, it is recommended that the owner or agent should discuss the extent of the application of the VBBL with the Chief Building Official with respect to the intended work. An application for "Acceptance of Existing Conditions with Mitigating Features" that includes a Dedicated Detection and Recall System (DDRS) may be made by the Registered Professional, see Bulletin 2000-063-AD for more information.
4. For a new building other than a high building, if a fire alarm system is neither required nor provided, a DDRS is permitted to be used in the automatic emergency recall operation of the elevators.
5. For an existing building other than a high building that is not equipped with a fire alarm system, a DDRS may be used in the automatic emergency recall operation of the elevators.
6. For an existing building other than a high building in which an existing fire alarm system cannot be adapted for the emergency operation of the modernized elevators, a DDRS may be used.
7. In a Dedicated Detection and Recall System, fire detectors installed for the purpose of the CSA B44 located in the elevator machine room(s), elevator hoistway(s) and in each floor area in front of the elevator(s) must be connected to a dedicated "Control Unit" that must be designated as an "Elevator Recall Control and Supervisory Panel"; and clearly identified as an "Elevator Recall Control and Supervisory Panel (This is not a fire alarm system)" in a permanent, conspicuous & legible manner. It is intended by this bulletin that in a DDRS, the smoke detectors comply with CAN/ULC-S529 "Smoke Detectors for Fire alarm Systems", heat detectors comply with ULC-S530 "Heat Actuated Fire Detectors for Fire Alarm Systems" and the control unit complies with ULC-S527 "Control Units for Fire Alarm System. It is also intended by this bulletin that the DDRS is comprised of the aforementioned fire alarm system components (although not considered a fire alarm system) and is to be installed in conformance with the applicable requirements of the VBBL, CAN/ULC-S524 and C22.1 Canadian Electrical Code, Part I.
8. Smoke detectors required by Clause 3.2.4.12.(1)(h) installed in each floor area in front of the elevator(s) where required by Sentence 3.2.6.4.(5) must have separate zone indication of the actuation of smoke detectors in conformance with Clause 3.2.4.9.(2)(i) of the VBBL.
9. The number of smoke detectors required to be installed in each floor area in front of the elevator(s) and in the elevator machine room is dependent on a maximum area protected by a spot type smoke detector as prescribed by CAN/ULC-S524.
10. Manual stations of a fire alarm system are not permitted to initiate recall, for the purpose of B44.
11. In a 2-stage fire alarm system, the automatic emergency recall must be provided for elevators upon the operation of fire detectors at the first stage.
12. Where the Dedicated Detection and Recall System is permitted to be installed, the DDRS must not interfere with the operation of the fire alarm system.

SUMMARY OF AUTOMATIC EMERGENCY RECALL OPERATION OF ELEVATORS

Description of Building				Elevator Recall	Emergency Power Supply For Elevator	Protection of Electrical Conductors
High Building	New	FAS required		FAS to be used in emergency operation of elevators	Required	Required
	Existing	FAS required	Existing FAS adaptable	FAS to be used in emergency operation of elevators	Recommended	Required if installation of conductors is new. Otherwise recommended
			Existing FAS not adaptable	DDRS may be used with Acceptance of Existing Conditions with Mitigating Features required ⁽¹⁾⁽²⁾	Recommended	Recommended
Non-High Building	New	FAS required or provided		FAS to be used in emergency operation of elevators	Not applicable	Not applicable
		FAS not provided		DDRS	Not applicable	Not applicable
	Existing	FAS required or provided	Existing FAS adaptable	FAS to be used in emergency operation of elevators	Not applicable	Not applicable
			Existing FAS not adaptable	DDRS ⁽²⁾	Not applicable	Not applicable
		FAS not provided		DDRS	Not applicable	Not applicable

Note:

- (1) Application for “Acceptance of Existing Conditions with Mitigating Features” is required. Please refer to Item No.3.
- (2) The Dedicated Detection and Recall System must not interfere with the operation of the existing fire alarm system.

PERMIT SUBMISSION REQUIREMENTS

Every new elevator in a building and every elevator that is undergoing an upgrade must comply with both the requirements of CSA B44 and the Vancouver Building By-law. Therefore, an alteration (voluntary or mandatory) to an elevator in a building regulated by the Building By-law shall require a building permit and an electrical permit. For all proposed elevator and fire alarm upgrades, the following documents will be required at the time of applications for building and electrical permits:

1. Architectural floor plans and electrical plans (5 sets) drawn to an indicated scale which shows the location of:
 - a) the elevators;
 - b) the FA devices that are used to initiate emergency recall of elevators;
 - c) the fire alarm annunciator and the fire alarm control panel, or the Dedicated Detection and Recall System panel and devices, whichever are applicable;
 - d) the recall level and the alternate recall level; and
 - e) the means of egress from the elevators at the recall and alternate recall levels (see also Bulletin 2000-009-BU).

2. A statement that the design complies with the Vancouver's Building By-law (No. 10908) and the latest edition of the CSA B44 standard adopted by the BCSA shall be shown on the architectural and electrical plans.
3. A letter to the Chief Building Official describing the full extent of the fire alarm system upgrade; the proponent of such proposal must spell out the scope of the project, for the purpose of Bulletin 2006-004-BU/EL.
4. The electrical plans for the intended FAS upgrade must show and include a complete and detailed description of the following (where applicable):
 - a) description of sequence of operation;
 - b) installation instructions;
 - c) description of each type of field device;
 - d) device address;
 - e) location of each fault isolator;
 - f) design requirements to appropriate Standard;
 - g) one or two stage system(s);
 - h) description of ancillary devices activated by FAS;
 - i) signal to Fire Department provided in conformance with CAN/ULC-S561; and
 - j) FA system zoning required in Sentence 3.2.4.9.(2) of Division B of the VBBL.
5. The electrical plans for the intended FAS upgrade are required to include a separate wiring block diagram (schematic & riser diagram) showing the interconnection of field devices, fault isolators, control units, transponders, annunciators, ancillary devices and power supplies external to control units or transponders (where applicable).
6. The architectural and electrical plans are to be sealed by the Registered Professionals responsible for the elevator and electrical design, complete with SCHEDULE B letter of assurance for Architectural and Electrical disciplines.

FUNCTIONAL TEST AND VERIFICATION FOR AUTOMATIC EMERGENCY RECALL OPERATION OF ELEVATORS (SEE ALSO BULLETIN 2003-004-BU)

For any newly installed elevator or any alteration to an existing elevator, confirmation of functional testing for automatic emergency recall operation of elevator and verification of the fire alarm system or the DDRS must be provided by the design professionals, and submitted to the City prior to the operation of the elevator. Approval by the BC Safety Authority is required also.

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