Elevating and Amusement Devices
Safety Division

DIRECTOR'S RULING

Ref. No.: 114/94
Rev. No.: Date: July 20, 1994

Subject: MCCR PROCEDURE FOR INITIAL INSPECTION AND TESTING OF:
- BYPASS SWITCHES (B44 CLAUSE 3.12.1.4)
- DOOR MONITORING SYSTEM (B44 CLAUSE 3.12.1.5)

Sent to: All Elevator Contractors Registered For Installation U1 & Consultants

1. ORDER TO CONTRACTORS

1.1. Starting immediately, the contractor who has installed an elevator, shall facilitate inspection and tests of "bypass switches" for conformance with B44 clause 3.12.1.4 and where applicable, the "door monitoring system" for conformance with B44 clause 3.12.1.5, in accordance with the procedure described in the attachment to this Ruling.

1.2. The contractors who undertake to inspect and test the bypass switches and door monitoring systems differently than outlined in the attachment to this ruling shall submit their procedure IN WRITING as follows:

   a) For elevators, whose design submission is received for registration before November 1, 1994, the proposed procedure must be received by the Chief Elevator Inspector (fax # 416-234-6037) at least 3 working days before the date of inspection.

   b) For elevators whose design submission is received for registration on or after November 1, 1994, the proposed procedure must form part of the design submission.

2. BACKGROUND

2.1 In accordance with Director's Ruling #94/92 REV. A of January 20, 1993, the subject B44 rules have been enforced on new and altered elevators for which design submissions are received on or after July 1, 1993.

2.2 Inspectors, however, have been encountering difficulties in agreeing upon the inspection and test procedures with the contractors.

2.3 In order to avoid future disagreements and speed up the inspection process, we have decided, with this Ruling, to make our inspection procedure public in order to enable contractors to prepare for the required tests or to propose an alternative procedure.

SEE ENCLOSURE
INITIAL INSPECTION PROCEDURE FOR:

- Door Bypass Switches (per clause 3.12.1.4)
- Door Monitoring System (per clause 3.12.1.5 in B44 - General instruction No. 3-1992 and, as of November 1, 1994 per Director's Ruling #114/94)

1. **INSPECTION PRE-REQUIREMENTS**

1.1 Effective means of 2-way voice communication shall be provided between the machine room and the car (top-of-car, inside car or landing door, as the case may be) for the purpose of carrying out the following tests and inspections. The means shall be provided by the contractor.

1.2 The normal operating and control devices must be tested to verify conformance with applicable code rules; specifically:

   a) top-of-car transfer switch (no operation from car-top with this switch in "off" position),
   b) car door contacts and landing door interlocks or contacts.

2. **DOOR BYPASS SWITCHES** (clause 3.12.1.4)

2.1 **SWITCHES AND CIRCUITS**

   Check that:

   a) At least one switch marked "CAR DOOR BYPASS" and at least one switch marked "LANDING DOOR BYPASS" is provided in the controller;
   b) Each switch has two positions, marked "bypass" and "off";
   c) If more than two bypass switches are provided, each is identified by referring to the doors it bypasses;
   d) Contacts of the switches are positively open in both positions;
   e) Circuits incorporating the switches meet "redundancy" requirements in clause 3.12.9c.

   **Note re 1.1e):** Every critical component in the circuits, such as a relay, solid state, etc., if any, will be identified in Supplement ‘A’ to the specification sheet along with instructions for testing.

2.2 **SWITCHES TO DISCONNECT ALL MODES OF OPERATION**

   Turn one switch at a time to "BYPASS" position and verify that car does not respond to:

   a) any car or landing call and any of the following, if provided;
   b) SES recall,
   c) hoistway access switch, (consideration for this switch to remain operative)
   d) levelling operation, and
   e) truck-zone operation.

2.3 **SWITCHES TO ENABLE TOP-OF-CAR INSPECTION OPERATION**

   Turn the top-of-car transfer switch to "maintenance" position and follow this procedure:

2.3.1. **Car Door Bypass**

   a) turn "CAR DOOR BYPASS" switch to "BYPASS" position,
   b) force* the car door open with all landing doors closed,
   c) verify that car moves on the inspection operation,
   d) close the door and return the bypass switch to "OFF",
   e) if there are two car doors, repeat the procedure for each door.
2.3.2. **Landing Door Bypass**  
a) turn "landing door bypass" switches to "BYPASS" position,  
b) force* any landing door open with all car doors closed,  
c) verify that car moves on inspection operation,  
d) close the door and return the bypass switch to "OFF".

2.3.3. **Car and Landing Door Bypass**  
a) turn both "landing" and "car door" bypass switches to "BYPASS",  
b) force* a car door and corresponding landing door open,  
c) verify that car moves on inspection operation,  
d) close all doors and return both switches to "OFF",  
e) if there are two car doors, repeat the procedure for each door.

*Note: Instead of forcing the door open, the opening of the door contact or interlock may be simulated by disconnecting the wiring leading to the contact or interlock.

2.4 **IN-CAR INSPECTION OPERATION**

If this feature is provided, follow procedures in 2.3, after the in-car transfer switch is turned to the "maintenance" position.

2.5 **MACHINE ROOM INSPECTION OPERATION WITH BYPASSED DOORS**

If this feature is provided, first verify that:  
a) elevator is equipped with power operated horizontally sliding car and landing doors that are mechanically coupled while the car is in a landing zone;  
b) a sign, conforming to clause 3.12.1.4.4(d) is placed near the machine room transfer switch;  
c) communication with the car is possible from the machine room in accordance with clause 3.12.1.4.4.d(ii).

Turn the machine room transfer switch to "maintenance" position and follow this procedure:

2.5.1. **Car Door Bypass**  
Same as in 2.3.1.

2.5.2. **Landing Door Bypass**  
Same as in 2.3.2.

2.5.3. **Landing Door Bypass with Faulty Car Door Circuits**  
a) Turn "landing door bypass" switch to "bypass" position.  
b) Place a jumper over the car door contact.  
c) Force* a landing and corresponding car door partially open.  
d) Verify that the car cannot be moved by using the machine room inspection operation.  
e) Close all doors, remove the jumper and return the switch to "OFF".

*Note: see note following 2.3.3.

2.5.4. **Car and Landing Door Bypass**  
a) Same as 2.3.3(a).  
b) Same as 2.3.3(b).  
c) Verify that the car cannot be moved by using machine room inspection operation.  
d) Close all doors and return both switches to "OFF".  
e) Same as 2.3.3(e).
3. **DOOR MONITORING SYSTEM (clause 3.12.1.5)**

All of the following tests are carried out while the elevator is on automatic operation.

Caution: All tests should be carried on from inside the car, having good voice communication between the car and the person in the machine room and always assuming that the car may move unexpectedly if the monitoring system is faulty.

3.1 **CAR DOOR NEITHER CLOSED NOR FULLY OPEN (CLAUSE 3.12.1.5A)**

a) Obstruct the closing of the car door and maintain stalled car and landing door condition (neither closed or fully open); if there are two car doors, repeat this procedure with each car door, while the other car door is closed.

b) After each of the following conditions is created, complete steps (c) to (e):

   i) **TEST A** - A jumper is placed across the car door contact* or the car door contact closed manually;
   
   ii) **TEST B** - A jumper is placed across the related landing door interlock contact* or the interlock contact made manually;
   
   iii) **TEST C** - One jumper placed across the car door contact* and another jumper across the related landing door interlock contact* (combination of Test A and B).

*Note: The jumpers may be placed directly across the contacts or at the controller across the terminals if a separate set of terminals lead to a car door contact and another set to the related landing door interlock contacts.

iv) **TEST D** - One jumper placed across two terminals of the controller between which the car door contact and all corresponding landing door interlock contacts are connected in a series. This test would not be possible to carry out on so called "split" circuits, where a single jumper wire cannot bypass the car and landing door contacts.

c) Place a car call to another landing.

d) Observe that the car remains inoperative until the car door blocking is removed and doors close fully.

**ANALYSIS OF TEST RESULTS:**

(i) It is expected that each test will show results as in 3.1d).

(ii) For the reasons explained in Director's Ruling #113/94, and until the date set in that Ruling, it is acceptable that a monitoring system successfully passes at least tests "A", "B" and "C" or alternatively only "D" where this test can be performed.

3.2 **CAR DOOR FULLY OPEN (CLAUSE 3.12.1.5B)**

a) Open the car and related landing door and maintain the car door in fully open position. If there are two car doors, repeat this procedure with each car door, while the other door is closed.

b) Same as 3.1(b).

c) Same as 3.1(c).

d) Observe that the power door closing is inoperative even when the "door close" button is activated.

e) Remove all jumper wires or reinstate door contacts and observe that the car returns to normal operation, including the power closing.

**ANALYSIS OF TEST RESULTS:**

Same as analysis following tests in 3.1.