

STATE OF NEW YORK  
DEPARTMENT OF STATE

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ANDREW M. CUOMO  
GOVERNOR

ROSSANA ROSADO  
SECRETARY OF STATE

SOUTHERN REGION - HUDSON VALLEY BOARD OF REVIEW

In the Matter of the Petition of:  
METROPOLITAN TRANSPORTATION AUTHORITY  
SYSTEM-WIDE VARIANCE  
For a Variance to the New York State  
Uniform Fire Prevention & Building Code

DECISION

PETITION NO. 2019-0220

Upon the application of Metropolitan Transportation Authority System-Wide Variance, and upon taking testimony and hearing argument thereon at a duly noticed hearing before the Hudson Valley – Regional Board of Review held at the Cortlandt Town Hall, 1 Heady Street, Cortlandt Manor, New York, on April 30, 2019, and upon all other papers in this matter, the Board makes the following determination:

NATURE OF GRIEVANCE AND RELIEF SOUGHT

The petition pertains to a system-wide variance of alterations and additions to all existing subterranean transit stations, fan ventilation plants, electrical substation structure, plant pumps, and miscellaneous buildings, occupancy Group A for transit stations, Group F-2 for fan, pump, and electrical structures. All are of Type 2B construction. All structures are located throughout the five boroughs of the New York City, in the five counties of New York, Bronx, Queens, Kings, and Richmond, in the State of New York.

Relief is requested from:

**19 NYCRR Part 1221, The International Building Code, Section 903.2.1.3**, Section 903.2.1.3 states that

Group A-3, an automatic sprinkler system shall be provided for fire areas containing Group A-3 occupancies and intervening floors of the building where one of the following conditions exists: the fire area exceeds 12,000 square feet (1115m<sup>2</sup>), the fire area has an occupant load of 300 or more, the fire area is located on a floor other than a level of exit discharge serving such occupancies.

[The Petitioner request relief from this requirement, compliance with this section incurs a hardship at existing facilities which are unheated and exposed to the weather at most locations.]

**19 NYCRR Part 1221, The International Building Code, Section 905.3.1**, Section 905.3.1, states that Class III standpipe systems shall be installed throughout buildings where the floor level of the highest story is located more



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than 30 feet (9144 mm) above the lowest level of fire department vehicle access, or where the floor level of the lowest story is located more than 30 feet (9144 mm) below the highest level of fire department vehicle access.

[The Petitioner requests relief from this requirement, compliance with this section is counter to the MTA design requirements for standpipe types and location.]

**19 NYCRR Part 1221, The International Building Code, Section 905.3.2**, Section 905.3.2, states that a Group A, Class I automatic wet standpipes shall be provided in non-sprinklered Group A buildings having an occupant load exceeding 1,000 persons. Exceptions: open-air-seating spaces without enclosed spaces.

[The Petitioner requests relief from this requirement, compliance with this section at all open cut, elevated, and at grade stations due to environmental conditions which are counter to the requirements for standpipe types and location.]

**19 NYCRR Part 1221, The International Building Code, Section 1010.1**, Section 1010.1 states Means of egress doors shall meet the requirements of this section. Size of doors. The required capacity of each door opening shall be sufficient for the occupant load thereof and shall provide a minimum clear width of 32 inches (813 mm). Egress doors shall be of the pivoted or side-hinged swinging type.

[The Petitioner requests relief from this requirement, compliance with this section is counter to the MTA design requirements for egress doors at the following locations: underground Fan Plants, Pump Plants, Electrical Substations and other similar facilities.]

**19 NYCRR Part 1221, The International Building Code, Section 1011.5**, Section 1011.5 states Stair treads and risers shall comply with Sections 1011.5.1 through 1011.5.5.3. Stair riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. The riser height shall be measured vertically between the nosings of adjacent treads. Rectangular tread depths shall be 11 inches (279 mm) minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's nosing.

[The Petitioner requests relief from this requirement, compliance with this section is counter to the MTA design requirements for egress stairs at the following locations: underground Fan Plants, Pump Plants, Electrical Substations, and other similar facilities.)

**19 NYCRR Part 1221, The International Building Code, Section 1023.2 and Section 1023.4**, Section 1023.2, which states the construction for enclosures for interior exit stairways and ramps shall be constructed as fire barriers in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both. Interior exit stairway and ramp enclosures shall have a fire-resistance rating of not less than two hours where connecting four stories or more and not less than one hour where connecting less than four stories. The number of stories connected by the interior exit stairways or ramps shall include any basements, but not any mezzanines. Interior exit stairways

and ramps shall have a fire resistance rating not less than the floor assembly penetrated but need not exceed two hours.

Section 1023.4 Openings. Interior exit stairway and ramp opening protectives shall be in accordance with the requirements of Section 716. This section was triggered by Chapter 11 Additions, Section 1101.1 of the International Existing Building Code.

[The Petitioner requests relief from this section and proposes an alternative with NFPA 130 requirements and compliance would inhibit ventilation in emergencies and reduce passenger volume.]

**19 NYCRR Part 1225, The International Fire Code, Section 905.4**, Section 905.4 states that the location of Class I standpipe hose connections shall be provided in all of the following locations. In every required interior exit stairway, a hose connection shall be provided for each story above and below grade. Hose connections shall be located at an intermediate landing between stories, unless otherwise approved by the fire code official. Where the most remote portion of a non-sprinklered floor or story is more than 150 feet (45 720 mm) from a hose connection, the fire code official is authorized to require that additional hose connections be provided in approved locations.

[The Petitioner requests relief from this requirement, compliance with this section is counter to the MTA design requirements for standpipe types and location.]

**19 NYCRR Part 1225, The International Fire Code, Section 906**, Section 906.1, Portable fire extinguishers shall be installed in all of the following locations: In Group A occupancies. 906.5. Conspicuous location. Portable fire extinguishers shall be located in conspicuous locations where they will be readily accessible and immediately available for use.

[The Petitioner requests relief from this requirement, compliance with this section is counter to the MTA requirements for public locations of fire extinguishers.]

**19 NYCRR Part 1227, The Existing Building Code, Section 1103.3**, Lateral force-resisting system. The lateral force-resisting system of existing buildings to which additions are made shall comply with Sections 1103.3.1, 1103.3.2, and 1103.3.3.

[The Petitioner requests relief from this section and the seismic requirements of International Building Code 1613.]

**19 NYCRR Part 1221, The Building Code of New York State, Section 1613.1**, which states every structure, and portion thereof, including nonstructural components that are permanently attached to structures and their supports and attachments, shall be designed and constructed to resist the effects of earthquake motions in accordance with ASCE.7.

[The Petitioner requests relief from this section, MTA has their own design methods.]

**19 NYCRR Part 1223, The International Mechanical Code, Section 401.2,** Ventilation required. Every occupied space shall be ventilated by natural means in accordance with Section 402 or by mechanical means in accordance with Section 403.

[The Petitioner requests relief from these requirements and proposes an alternative based upon NFPA 130.]

#### FINDINGS OF FACT

1. The buildings and structures that are the subject of this determination are existing transit stations, fan ventilation plants, electrical substation structures, pump plants, and miscellaneous buildings and structures found throughout the New York City Subway in the five-borough area.
2. The buildings and structures that are the subject of this determination are to include future additions or alterations to existing transit stations, fan ventilation plants, electrical substation structures, pump plants, and miscellaneous buildings and structures found throughout the New York City Subway in the five-borough area.
3. The building occupancies are as follows, occupancy group A3 for transit stations and with mixed use areas, Group F-2 for fan plants, pump plants, and electrical substations.
4. The Metropolitan Transportation Authority of the New York City Transit, M.T.A.-N.Y.C.T., utilizes the Uniform Fire Prevention and Building Code of New York State and National Fire Protection Association N.F.P.A. 130 Standard for Fixed Guideway Transit and Passenger Rail Systems for design and safety criteria.
5. The existing structures and stations proposed additions and alterations will be constructed as noncombustible construction Type 2B, 2A, or 1B.
6. The installation of automatic automated sprinkler systems per Section 903.2.1.3 impose practical difficulties due to the fact that all existing underground, at-grade, and elevated stations are not conditioned, and open to the weather. These conditions make the installation of automated sprinkler systems problematic. The inadvertent initiation of a system without terminating power to the third rail could constitute an electrocution scenario.
7. Sections 905.3.2 and 905.4 of the Building Code of New York State require the installation of automatic wet standpipes and class one hose connections. The Petitioner has indicated that a dry standpipe system currently exists within almost half of the facilities and that the Fire Department of New York is extensively trained in utilizing the existing dry standpipe system to fight underground station fires. A dry standpipe system provides an alternative to the required wet system for the unheated stations.
8. Section 906.1 of the Building Code of New York State requires portable fire extinguishers in Group A occupancies. The M.T.A. does not wish to install portable fire extinguishers within public spaces, because they are subject to vandalism and are an attractive nuisance to pranksters. Furthermore, the types of fires that normally occur within the subway environment,

track fire, vehicle fires, et cetera, do not lend themselves to first aid by the general public who may have no training in extinguishing such fires. Portable fire extinguishers are to be located in back-of-house operational areas and customer service booth. These extinguishers will be available for use by M.T.A. personnel.

9. Section 1023.1 General, states interior exit stairways and ramps serving as an exit component in a means of egress system shall comply with the requirements of this section. Interior exit stairways and ramps shall be enclosed and lead directly to the exterior of the building or shall be extended to the exterior of the building with an exit passageway conforming to the requirements of Section 1024. Open stairways allow for greater flow of passengers both entering and exiting in the station without the impediment of doors and allowing for visual way-finding during emergency events.

10. The basis of the request from the Petitioner for use of hatchways with ship ladders at mechanical facilities is that the location of underground structures and access point at grade are required to fall within the right-of-way of public areas. The most common location is the sidewalk and median adjacent to streets. These structures are accessed by MTA personnel only.

11. The open stairways from the platform level to the street level provide ventilation through movements of train cars via piston in tube method and depressurization of the platform and mezzanine spaces during fire incidents provided by emergency exhaust fans along certain tunnels. This protocol follows NFPA 130, Chapter 7, Emergency Ventilation Systems.

12. Section 401.1 of the Mechanical Code of New York State governs the ventilation requirements for all occupied spaces within a building and provides a means for checking its adequacy. These requirements are triggered by the addition of occupied space. The M.T.A. believes that adequate ventilation will be available for both the additional and existing space, because stairway openings into the station and the frequent movement of the trains throughout the station tunnels will supply sufficient ventilation. This design follows N.F.P.A. 130.

#### CONCLUSION OF LAW

The proposed variance will not substantially adversely affect the Code's provisions for health, safety, and security. Strict compliance with the requirements of the Uniform Fire Prevention and Building Code would entail practical difficulties or unnecessary hardship and would not achieve the Code's intended objective.

#### DETERMINATION

WHEREFORE IT IS DETERMINED that the application for a variance from 19 NYCRR Part 1221, The International Building Code, Section 903.2.1.3, 19 NYCRR Part 1221, The International Building Code, Section 905.3.1, 19 NYCRR Part 1221, The International Building Code, Section 905.3.2, 19 NYCRR Part 1221, The International Building Code, Section 1010.1, 19 NYCRR Part 1221, The International Building Code, Section 1011.5, 19 NYCRR Part 1221, The International Building Code, Section 1023.2 and Section 1023.4, 19 NYCRR Part 1225, The International Fire Code,

Section 905.4, 19 NYCRR Part 1225, The International Fire Code, Section 906, 19 NYCRR Part 1227, The International Existing Building Code, Section 1103.3, 19 NYCRR Part 1221, The International Building Code, Section 1613.1, 19 NYCRR Part 1223, The International Mechanical Code, Section 401.2, be GRANTED with the following conditions:

1. That in all other respects, design and construction shall conform with applicable requirements of the Building Codes of New York State and the current version of the NFPA 130 at the time of design.
2. Dry standpipe systems should be installed at all subterranean station additions or those under Alteration Level 3 where they do not already exist.
3. The design professional shall provide a seismic and loading report for any new sub terrain subway station or substantial addition.

This decision is limited to the specific building and application before it, as contained within the petition, and should not be interpreted to give implied approval of any general plans or specifications presented in support of this application.

Acting Chairman Joseph Cherubino and members, Megan Smailer and Ronald Cummings, all concur.

So ordered.

Southern Region - Hudson Valley Board of Review

  
Acting Chairman Joseph Cherubino

DATE: 9-3-2019

TD:eh