

Recommendation 25. Nongovernmental and quasi-governmental entities that own or lease buildings and are not subject to building and fire safety code requirements of any governmental jurisdiction are nevertheless concerned about the safety of the building occupants and the responding emergency personnel. NIST recommends that such entities be encouraged to provide a level of safety that equals or exceeds the level of safety that would be provided by strict compliance with the code requirements of an appropriate governmental jurisdiction. To gain broad public confidence in the safety of such buildings, NIST further recommends that as-designed and as-built safety be certified by a qualified third party, independent of the building owner(s). The process should not use self-approval for code enforcement in areas including interpretation of code provisions, design approval, product acceptance, certification of the final construction, and post-occupancy inspections over the life of the buildings.⁴⁶

Recommendation 26. NIST recommends that state and local jurisdictions adopt and aggressively enforce available provisions in building codes to ensure that egress and sprinkler requirements are met by existing buildings.⁴⁷ Further, occupancy requirements should be modified where needed (such as when there are assembly use spaces within an office building) to meet the requirements in model building codes. Provisions related to egress and sprinkler requirements in existing buildings are available in such codes as the *International Existing Building Code (IEBC)*, *International Fire Code*, NFPA 1, NFPA 101, and ASME A 17.3. For example, the IEBC defines three levels of building alteration (removal and replacement or covering of existing materials and equipment, reconfiguration of space or system or installation of new equipment, and work area in excess of 50 percent of the aggregate area of the building). At the lowest level there are no upgrade implications for sprinklers and the egress system. At the next level, sprinklers are required in work areas serving greater than 30 persons if certain other conditions related to building height and use such as shared exists also are met. There are numerous requirements for means of egress, including number of exits, specification of doors, dead-end corridors and travel distances, lighting, signage, and handrails. At the highest level, the sprinkler and egress requirements are identical to the second level without the minimum 30 person restriction and the other conditions related to building height and use. The Life Safety Code (NFPA 101) applies retroactively to all buildings, independent of whether any work is currently being done on the building, and ASME 17.3 applies retroactively to all elevators as a minimum set of requirements.

Recommendation 27. NIST recommends that building codes incorporate a provision that requires building owners to retain documents, including supporting calculations and test data, related to building design, construction, maintenance and modifications over the entire life of

⁴⁶ The long-standing stated policy of The Port Authority of New York and New Jersey (PANYNJ) was to meet and, where appropriate, exceed the requirements of local building and fire codes, and it entered into agreements with the New York City Department of Buildings and The Fire Department of the City of New York in accordance with that policy. Although the PANYNJ sought review and concurrence from New York City in the areas listed in the recommendation, the PANYNJ was not required to yield, and appears not to have yielded, approval authority to New York City. The PANYNJ was created as an interstate entity, a “body corporate and politic,” under its charter, pursuant to Article 1, Section 10 of the U.S. Constitution permitting compacts between states. Further, there are many other similar nongovernmental and quasi-governmental entities in the United States. A comprehensive review of documents conducted as part of this Investigation suggests that the WTC towers generally were designed and maintained consistent with the requirements of the 1968 New York City Building Code. Areas of concern included fireproofing of WTC floor system, height of tenant separation walls, and egress requirements for the assembly use space for the Windows of the World in WTC 1 and Top of the World observation deck in WTC 2. These areas of concern did not play a significant role in determining the outcomes related to the events of September 11, 2001.

⁴⁷ The WTC towers were unsprinklered when built. It took nearly 28 years after passage of New York City Local Law 5 in 1973, which required either compartmentation or sprinklering, for the buildings to be fully sprinklered (the Port Authority chose not to use the compartmentation option in Local Law 5). This was about 13 years more than the 15-year period for full compliance with Local Law 5 that was set by Local Law 84 of 1979.