§ 102–80.95 Is the Fire Administration Authorization Act of 1992 applicable to all Federal agencies?

Yes, the Act applies to all Federal agencies and all federally owned and leased buildings in the United States.

AUTOMATIC SPRINKLER SYSTEMS

§ 102–80.100 What performance objective should an automatic sprinkler system be capable of meeting?

The performance objective of the automatic sprinkler system is that it must be capable of protecting human lives. Sprinklers should be capable of controlling the spread of fire and its effects beyond the room of origin. A functioning sprinkler system should activate prior to the onset of flashover.

EQUIVALENT LEVEL OF SAFETY ANALYSIS

§ 102–80.105 What information must be included in an equivalent level of safety analysis?

The equivalent level of life safety evaluation is to be performed by a qualified fire protection engineer. The analysis should include a narrative discussion of the features of the building structure, function, operational support systems and occupant activities that impact fire protection and life safety. Each analysis should describe potential reasonable worst case fire scenarios and their impact on the building occupants and structure. Specific issues that must be addressed include rate of fire growth, type and location of fuel items, space layout, building construction, openings and ventilation, suppression capability, detection time, occupant notification, occupant reaction time, occupant mobility, and means of egress.

§ 102–80.110 What must an equivalent level of safety analysis indicate?

To be acceptable, the analysis must indicate that the existing and/or proposed safety systems in the building provide a period of time equal to or greater than the amount of time available for escape in a similar building complying with the Act. In conducting these analyses, the capability, adequacy, and reliability of all building systems impacting fire growth, occupant knowledge of the fire, and time required to reach a safety area will have to be examined. In particular, the impact of sprinklers on the development of hazardous conditions in the area of interest will have to be assessed.

§ 102–80.115 Is there more than one option for establishing that an equivalent level of safety exists?

Yes, the following are three options for establishing that an equivalent level of safety exists:

(a) In the first option, the margin of safety provided by various alternatives is compared to that obtained for a code complying building with complete sprinkler protection. The margin of safety is the difference between the available safe egress time and the required safe egress time. Available safe egress time is the time available for evacuation of occupants to an area of safety prior to the onset of untenable conditions in occupied areas or the egress pathways. The required safe egress time is the time required by occupants to move from their positions at the start of the fire to areas of safety. Available safe egress times would be developed based on analysis of a number of assumed reasonable worst case fire scenarios including assessment of a code complying fully sprinklered building. Additional analysis would be used to determine the expected required safe egress times for the various scenarios. If the margin of safety plus an appropriate safety factor is greater for an alternative than for the fully sprinklered building, then the alternative should provide an equivalent level of safety.

(b) A second alternative is applicable for typical office and residential scenarios. In these situations, complete sprinkler protection can be expected to prevent flashover in the room of fire origin, limit fire size to no more than 1 megawatt (950 Btu/sec), and prevent flames from leaving the room of origin. The times required for each of these conditions to occur in the area of interest must be determined. The shortest of these three times would become the time available for escape. The difference between the minimum time