§ 51.204 HUD-assisted hazardous facilities.

In reviewing applications for proposed HUD-assisted projects involving the installation of hazardous facilities, the Department shall ensure that such hazardous facilities are located at an acceptable separation distance from residences and from any other facility or area where people may congregate or be present. The mitigating measures listed in §51.205 may be taken into account in determining compliance with this section.

§ 51.205 Mitigating measures.

Application of the standards for determining an Acceptable Separation Distance (ASD) for a HUD-assisted project from a potential hazard of an explosion or fire prone nature is predicated on level topography with no intervening object(s) between the hazard and the project. Application of the standards can be eliminated or modified if:

(a) The nature of the topography shields the proposed project from the hazard.

(b) An existing permanent fire resistant structure of adequate size and strength will shield the proposed project from the hazard.

(c) A barrier is constructed surrounding the hazard, at the site of the project, or in between the potential hazard and the proposed project.

(d) The structure and outdoor areas used by people are designed to withstand blast overpressure and thermal radiation anticipated from the potential hazard (e.g., the project is of masonry and steel or reinforced concrete and steel construction).

§ 51.206 Implementation.

This subpart C shall be implemented for each proposed HUD-assisted project by the HUD approving official or responsible entity responsible for review of the project. The implementation procedure will be part of the environmental review process in accordance with the procedures set forth in 24 CFR parts 50 and 58.

[61 FR 13334, Mar. 26, 1996]

§ 51.207 Special circumstances.

The Secretary or the Secretary’s designee may, on a case-by-case basis, when circumstances warrant, require the application of this subpart C with respect to a substance not listed in appendix I to this subpart C that would create thermal or overpressure effect in excess of that listed in §51.203.

[61 FR 13334, Mar. 26, 1996]

§ 51.208 Reservation of administrative and legal rights.

Publication of these standards does not constitute a waiver of any right:

(a) Of HUD to disapprove a project proposal if the siting is too close to a potential hazard not covered by this subpart, and (b) of HUD or any person or other entity to seek to abate or to collect damages occasioned by a nuisance, whether or not covered by the subpart.

APPENDIX I TO SUBPART C OF PART 51—SPECIFIC HAZARDOUS SUBSTANCES

The following is a list of specific petroleum products and chemicals defined to be hazardous substances under §51.201.

Hazardous Liquids

Acetic Acid
Acetic Anhydride
Acetone
Acrylonitrile
Amyl Acetate
Amyl Alcohol
Benzene
Butyl Acetate
Butyl Alcohol
Carbon Bisulfide
Carbon Disulfide
Cellophane
Cresols

Crude Oil
(Petroleum)
Cumene
Cyclohexane
No. 2 Diesel Fuel
Ethyl Acetate
Ethyl Acrylate
Ethyl Alcohol
Ethyl Benzene
Ethyl Dichloride
Ethyl Ether
Gasoline
Heptane
Hexane
1,500 Btu/ft² hr will suffer intolerable pain.

The radiation flux level is well below 1500 Btu/ft² hr. An acceptable flux level, particularly for elderly people and children, is 450 Btu/ft² hr. The skin can be exposed to this degree of thermal radiation for 3 minutes or longer with no serious detrimental effect. The result would be the same as a bad sunburn. Therefore, the standard for areas in which there will be exposed people, e.g. outdoor recreation areas such as playgrounds and parks, is set at 450 Btu/hr. sq. ft. Areas covered also include open space ancillary to residential structures, such as yard areas and vehicle parking areas.

APPENDIX II TO SUBPART C OF PART 51—DEVELOPMENT OF STANDARDS; CALCULATION METHODS

I. Background Information Concerning the Standards

(a) Thermal Radiation: Flammable products stored in above ground containers represent a definite, potential threat to human life and structures in the event of fire. The resulting fireball emits thermal radiation which is absorbed by the surroundings. Combustible structures, such as wooden houses, may be ignited by the thermal radiation being emitted. The radiation can cause severe burn injuries and even death to exposed persons some distance away from the site of the fire.

(2) Criteria for Acceptable Separation Distance (ASD): Wooden buildings, window drapes and trees generally ignite spontaneously when exposed for a relatively long period of time to thermal radiation levels of approximately 10,000 Btu/hr. sq. ft. It will take 15 to 20 minutes for a building to ignite at that degree of thermal intensity. Since the reasonable response time for fire fighting units in urbanized areas is approximately five to ten minutes, a standard of 10,000 BTU/hr. sq. ft. is considered an acceptable level of thermal radiation for buildings.

People in outdoor areas exposed to a thermal radiation flux level of approximately 1,500 Btu/ft² hr will suffer intolerable pain after 15 seconds. Longer exposure causes blistering, permanent skin damage, and even death. Since it is assumed that children and the elderly could not take refuge behind walls or run away from the thermal effect of the fire within the 15 seconds before skin blistering occurs, unprotected (outdoor) areas, such as playgrounds, parks, yards, school grounds, etc., must be placed at such a distance from potential fire locations so that the radiation flux level is well below 1500 Btu/ft² hr. An acceptable flux level, particularly for elderly people and children, is 450 Btu/ft² hr. The skin can be exposed to this degree of thermal radiation for 3 minutes or longer with no serious detrimental effect. The result would be the same as a bad sunburn. Therefore, the standard for areas in which there will be exposed people, e.g. outdoor recreation areas such as playgrounds and parks, is set at 450 Btu/hr. sq. ft. Areas covered also include open space ancillary to residential structures, such as yard areas and vehicle parking areas.

(b) Blast Overpressure: The Acceptable Separation Distance (ASD) for people and structures from materials prone to explosion is dependent upon the resultant blast measured in pounds per square inch (psi) overpressure. It has been determined by the military and corroborated by two independent studies conducted for the Department of Housing and Urban Development that 0.5 psi is the acceptable level of blast overpressure for both buildings and occupants, because a frame structure can normally withstand that level of external exertion with no serious structural damage, and it is unlikely that human beings inside the building would normally suffer any serious injury. Using this as the safety standard for blast overpressure, nomographs have been developed from which an ASD can be determined for a given quantity of hazardous substance. These nomographs are contained in the handbook with detailed instructions on their use.

(c) Hazard Evaluation: The Acceptable Separation Distances for buildings, which are determined for thermal radiation and blast overpressure, delineate separate identifiable danger zones for each potential accident source. For some materials the fire danger zone will have the greatest radius and cover the largest area, while for others the explosion danger zone will be the greatest. For example, conventional petroleum fuel products stored in unpressurized tanks do not emit blast overpressure of dangerous levels when...