

Office of the Secretary, HUD

Pt. 51, Subpt. C, App. II

(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	Ethyl Benzene
Acetic Anhydride	Ethyl Dichloride
Acetone	Ethyl Ether
Acrylonitrile	Gasoline
Amyl Acetate	Heptane
Amyl Alcohol	Hexane
Benzene	Isobutyl Acetate
Butyl Acetate	Isobutyl Alcohol
Butyl Acrylate	Isopropyl Acetate
Butyl Alcohol	Isopropyl Alcohol
Carbon Bisulfide	Jet Fuel and
Carbon Disulfide	Kerosene
Cellosolve	Methyl Alcohol
Cresols	Methyl Amyl Alcohol
Crude Oil	Methyl Cellosolve
(Petroleum)	Methyl Ethyl Ketone
Cumene	Naptha
Cyclohexane	Pentane
No. 2 Diesel Fuel	Propylene Oxide
Ethyl Acetate	Toluene
Ethyl Acrylate	Vinyl Acetate
Ethyl Alcohol	Xylene

HAZARDOUS GASES

Acetaldehyde	Liquefied Natural
Butadiene	Gas (LNG)
Butane	Liquefied Petroleum
Ethene	Gas (LPG)
Ethylene	Propane
Ethylene Oxide	Propylene
Hydrogen	Vinyl Chloride

(Primary Source: "Urban Development Siting with respect to Hazardous Commercial/Industrial Facilities," by Rolf Jensen and Associates, Inc., April 1983)

[49 FR 5105, Feb. 10, 1984; 49 FR 12214, Mar. 29, 1984]

**APPENDIX II TO SUBPART C OF PART 51—
DEVELOPMENT OF STANDARDS: CAL-
CULATION METHODS**

*I. Background Information Concerning the
Standards*

(a) Thermal Radiation:

(1) *Introduction.* 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.

(3) *Acceptable Separation Distance From a Potential Fire Hazard.* This is the actual setback required for the safety of occupied buildings and their inhabitants, and people in open spaces (exposed areas) from a potential fire hazard. The specific distance required for safety from such a hazard depends upon the nature and the volume of the substance. The Technical Guidebook entitled "Urban Development Siting With Respect to Hazardous-Commercial Industrial Facilities," which supplements this regulation, contains the technical guidance required to compute Acceptable Separation Distances (ASD) for those flammable substances most often encountered.

(b) *Blast Overpressure.* The Acceptable Separation Distance (ASD) for people and structures from materials prone to explosion is

Explosive and Flammable Hazards (CEST and EA)

General requirements	Legislation	Regulation
HUD-assisted projects must meet Acceptable Separation Distance (ASD) requirements to protect them from explosive and flammable hazards.	N/A	24 CFR Part 51 Subpart C
Reference		
https://www.hudexchange.info/environmental-review/explosive-and-flammable-facilities		

1. Does the proposed HUD-assisted project include a hazardous facility (a facility that mainly stores, handles or processes flammable or combustible chemicals such as bulk fuel storage facilities and refineries)?

No

→ Continue to Question 2.

Yes

Explain:

→ Continue to Question 5.

2. Does this project include any of the following activities: development, construction, rehabilitation that will increase residential densities, or conversion?

No

→ Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.

Yes

→ Continue to Question 3.

3. Within 1 mile of the project site, are there any current or planned stationary aboveground storage containers:

- Of more than 100 gallon capacity, containing common liquid industrial fuels OR
- Of any capacity, containing hazardous liquids or gases that are not common liquid industrial fuels?

No

→ Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide all documents used to make your determination.

There are aboveground storage tanks, silos, at the project site. The project is in compliance with 24 CFR Part 51, subpart C, Appendix 1. Silos, aboveground storage tanks (AST) located at the project site do not contain hazardous liquids or hazardous gases as per the referenced regulation (copy of Appendix 1 attached to this worksheet). The silos have a capacity of 5 million pounds and serve as storage for polypropylene (plastic resin).

Yes

→ Continue to Question 4.

4. Is the Separation Distance from the project acceptable based on standards in the Regulation?

Please visit HUD's website for information on calculating Acceptable Separation Distance.

Yes

→ Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide map(s) showing the location of the project site relative to any tanks and your separation distance calculations. If the map identifies more than one tank, please identify the tank you have chosen as the "assessed tank."

No

→ Provide map(s) showing the location of the project site relative to any tanks and your separation distance calculations. If the map identifies more than one tank, please identify the tank you have chosen as the "assessed tank."
Continue to Question 6.

5. Is the hazardous facility located at an acceptable separation distance from residences and any other facility or area where people may congregate or be present?

Please visit HUD's website for information on calculating Acceptable Separation Distance.

Yes

→ Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations.

No

→ Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations.
Continue to Question 6.

6. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to make the Separation Distance acceptable, including the timeline for implementation. If negative effects cannot be mitigated, cancel the project at this location.

Note that only licensed professional engineers should design and implement blast barriers. If a barrier will be used or the project will be modified to compensate for an unacceptable separation distance, provide approval from a licensed professional engineer.

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

The proposed project consists of roadway improvements to develop a dedicated truck route in support of The Libman Company's additional private investment and creation of jobs. Improvements will be divided into two different roadway sections, the first of which will be a rural section consisting of 12 lf travel lanes, aggregate shoulders and ditches for drainage. The second will be an urban section consisting of 12 lf travel lanes, curb and gutters and storm sewers for drainage. The project will begin at the intersection of Route 45 and County Road 300 where a turn lane will be added to Route 45 allowing for a safe transition from Route 45 to County Road 300. Improvements along County Road 300 will consist of improving approximately 1,490 lf of roadway to a rural section between Route 45 and Elm Street. Also included will be improvements to the railroad approaches adjacent to Route 45. The route will then turn south at Elm Street and consist of approximately 1,000 lf of rural section before transitioning into approximately 1,770 lf of urban section. The route will then turn and head east on Front Street for approximately 300 lf where it will connect into the existing truck route at Libman. This section of roadway will also be an urban section consisting of storm sewer and curb and gutter.

Are formal compliance steps or mitigation required?

- Yes
 No