



Occupational Safety and Health Standards

Adopted by Reference under 8 AAC 61.1190

Petroleum Refining, Transportation and Handling Standards

Field Offices

1111 W. Eighth, Suite 304
P.O. Box 111149
Juneau, Alaska 99811-1149

3301 Eagle Street, Suite 305
Anchorage, Alaska 99503-4149

675 - 7th Avenue, Station J-1
Fairbanks, Alaska 99701-4596

2030 Sea Level Drive, Suite 220
Ketchikan, Alaska 99901

The standards prescribed in this subchapter were published on July 31, 1995. Alaska safety codes and standards apply to all places of employment. Information relative to the safety codes will be furnished by the above offices.

Revisions made May 2001 reflect technical revisions made by the regulations attorney under AS 44.62.125 (b) (6), made by ch. 58, SLA 1999, reflecting the name change of the Department and the corresponding title change of the commissioner of labor.

Updates to contact names and addresses shown on this page are made periodically as needed.



Good, Safe Jobs Are Alaska's Future

ALASKA DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

Section 18.60.010 of the Alaska Statutes designates the Alaska Department of Labor and Workforce Development as the agency responsible for developing and administering an occupational safety and health program for the State of Alaska. To carry out this responsibility, AS 18.60.055 established the Division of Labor Standards and Safety.

The division is charged with the responsibility and has the authority to:

Enforce all laws and lawful orders requiring work and work places to be safe and healthful;

Investigate disabling or fatal occupational injuries and illnesses;

Inspect work places to determine if conditions are safe and healthful;

Develop occupational safety and health standards which, after adoption, have the effect of law; and

Establish special orders, or rules and regulations to cover a specific place of employment or process of work.

A variance from an occupational safety and health standard adopted by the department may be granted by the Commissioner of Labor and Workforce Development as provided by AS 18.60.077, AS 18.60.081 and regulations promulgated pursuant thereto.

Editor's Notes: These safety and health standards are adopted by reference under 8 AAC 61.1190 of the Alaska Administrative Code and were published on July 31, 1995.

PETROLEUM REFINING, TRANSPORTATION
AND HANDLING STANDARDS
adopted by reference under 8 AAC 61.1190

Table of Contents

<u>Subsection</u>	<u>Subject</u>	<u>Page</u>
(a)	Equipment Identification	1
(b)	Fire Protection	1
(c)	Escape Exits	1
(d)	Tanks	2
(e)	Opening and Blinding Pipe Lines and Equipment	2
(f)	Hazardous Commodities	2
(g)	Leaded Gasoline Storage Tanks	3
(h)	Drainage	4
(i)	Agitation and Heating of Liquids in Tanks	5
(j)	Process Equipment Maintenance	5
(k)	Pumps, Pipe Lines, and Valves	5
(l)	Equipment Leakage and Breakage	5
(m)	Pressure Vessels	6
(n)	High-Pressure Hydrocarbons	6
(o)	Gas Compressors and Engines	7
(p)	Loading and Unloading Facilities and Operations	7
(q)	Wharves	8
(r)	Laboratories and Pilot Plants	8

8 AAC 61.1190 PETROLEUM REFINING, TRANSPORTATION, AND HANDLING.

(a) Equipment Identification.

(1) Each stationary tank or vessel containing flammable, corrosive, or poisonous substances shall be identified by a letter, number, name or a combination of these. The identifications must, when practical, be located so as to be legible from the location at which the tank or vessel is operated or controlled. Identifications shall be maintained so as to be legible.

(2) Pipe lines containing flammable, corrosive, or poisonous liquids or gases shall be identified to indicate their contents or purpose when identification is practical and the correct operation of the valves of the line is essential to the safety of employees. The identification of the lines shall be by name or color placed on the lines or on the valves in the lines and shall be legible from the place at which the valves are operated. This requirement does not prohibit identification by the use of both a name and a color. Identifications shall be maintained so as to be legible.

(b) Fire Protection. Fire protection and fire prevention practices are governed by subsection (dd) of section 8 AAC 61.1180.

(c) Escape Exits.

(1) At least two exits shall be provided from each of the floors of a building where a fire hazard exists due to the presence or proximity of light oils or flammable gases when the lack of such exits could prevent the escape of an employee. The exits shall be unobstructed, open doorways or swinging doors so located with respect to each other as to provide the maximum possibility of escape, and shall include unobstructed passage to a place of safety. Doors shall be of a type which can be readily opened from the inside without a key and must swing outward if located in an exterior wall. This requirement does not apply to one story buildings of less than 100 square feet floor area provided that an employee, when on the floor, is at no time more than 12 feet from an exit, nor does it apply to valve pits, vaults or manholes.

(2) The exit doors from rooms housing equipment containing corrosives, light oils, or flammable gases or vapors being processed or tested shall swing outward unless they would swing into corridors of less than five feet in width. When located between two of these rooms, the exit doors shall swing both ways. Exit doors shall not be locked in such a manner as to prevent ready exit while the rooms are occupied.

8 AAC 61.1190(c)(3)

(3) Two means of escape shall be provided from any elevated platform 10 feet or more above the floor or ground level, which serves or is connected to three or more vessels, and from which employees shall perform operating duties, and when the lack of the second means would prevent the escape of an employee in case of fire or other emergency. The means of escape may be by fixed ladder, stairway, ramp, walkway, slide or slide pole, and shall be so located relative to each other as to provide reasonably safe alternative means of escape.

(4) Each platform and walkway on fired processing equipment shall, if at an elevation of 10 feet or more above the floor or ground, be provided with at least two means of descent when the lack of such means could prevent the escape of an employee in the event of an emergency. The means of descent may be by stairway, ramp, fixed ladder, slide, or slide pole, and shall be so located relative to each other as to provide reasonably safe alternative means of escape.

(5) Fences, closely or immediately surrounding light oil or gas processing equipment which may hamper or prevent the escape of employees in an emergency, shall have gates opening outward. The gates shall be unlocked when the area within the enclosure is occupied, or other facilities affording equally quick exits must be provided.

(d) Tanks. The requirements, of subsection (cc) of section 8 AAC 61.1180, apply to the liquid loading and unloading facilities and operations of tanks.

(e) Opening and Blinding Pipe Lines and Equipment. The requirements of subsection (y) of section 8 AAC 61.1180 apply to opening and blinding pipelines and equipment.

(f) Hazardous Commodities.

(1) The requirements of Subpart H--Hazardous Materials, General Industry Standards apply to the storing, handling and transportation of hazardous commodities in petroleum industry operations.

(2) Corrosives.

(A) Water showers equipped with quick opening valves, and also water fountains equipped with quick opening valves having an outlet or outlets that will provide water to both eyes simultaneously, shall be provided at locations where employees are exposed to liquid corrosives under pressure, or where they are handled in bulk quantities. This requirement does not apply to sources of infrequent hazard such as the opening of pipelines carrying corrosives at locations remote from processing units, if at these locations an adequate supply of fresh water is provided.

(B) Shower and fountain locations shall be made conspicuous by special marking, signs, or other identification.

(C) When samples of corrosives are carried or transported in breakable bottles from one part of a plant to another part of a plant, as from a process unit or tank car to the laboratory, the bottles shall be transported in safe containers having individual compartments and strong carrying handles. The containers shall be plainly marked or tagged for identification and vented or so constructed that a gas or vapor pressure will not build up within the contents if a bottle leaks or a bottle breaks.

(i) The maximum pressure of the air used for transferring corrosives from a vessel shall not exceed that actually required, but in no case shall the pressure exceed the maximum allowable working pressure of the vessel.

(ii) The maximum pressure of the air for use in unloading corrosives from tank cars shall not exceed the maximum allowable air pressure as marked on the tank car shell. In the absence of such a marking, or if the marking is not legible, the air pressure used during unloading shall not exceed 25 psi.

(iii) When the available pressure of the air source used to unload or transfer corrosives exceeds the maximum pressure limitations as specified in (i) and (ii) of this subparagraph, a pressure regulating device shall be installed in the air line to reduce the air pressure to a point not in excess of the maximum allowable pressure of the vessel. A pressure relieving safety device and a pressure gauge shall be installed between the pressure regulator and the vessel. The pressure relieving safety device shall be set at a pressure not to exceed the maximum pressures permitted in (i) and (ii) of this subparagraph. Pressure regulators, pressure relieving safety devices and pressure gauges shall be used in operations for which they are designed and shall be maintained in an operative condition.

(g) Leaded Gasoline Storage Tanks.

(1) Employees who enter or engage in any type of work within tanks in leaded gasoline service that have not been thoroughly cleaned shall comply with the provisions of this subsection.

(2) An approved positive pressure supplied air hose mask, or other approved devices providing equivalent protection, shall be worn by any employee who enters a leaded gasoline storage tank that has not been thoroughly cleaned.

8 AAC 61.1190(g)(3)

(3) Hose lines for supplied air hose masks shall be kept clean. If an employee notices any odor, as of gasoline, while wearing his mask, he shall leave the tank at once and find the cause or get a new hose line.

(4) The employer shall provide hot and cold water shower bathing facilities for employees who enter to work within leaded gasoline storage tanks.

(5) All employees shall wear acid proof gloves and rubber boots of good quality in a safe and sanitary condition. Gloves and boots shall be provided by the employer.

(6) Employees shall bathe daily, either at the end of the day's work or when the job is finished. However, if at any time clothing becomes soaked with gasoline or sludge, a bath must be taken at once and clean clothing put on.

(7) Clothing shall be changed daily and laundered before being reworn. Clothing contaminated by sludge or gasoline shall be thoroughly rinsed in water or kerosene before being sent to the laundry.

(8) At the end of each day, and after the job is completed, respirators, boots, gloves and tools shall be cleaned.

(9) Due to the toxic nature of gasoline tank sludge, once it is removed from the tank it shall be kept wet to minimize the dust hazard and must be disposed of by one of the two methods specified in American Petroleum Institute bulletin 2016, "Cleaning Tanks Used for Gasoline or Similar Low Flash Products":

(A) burying in a location where it will not be uncovered; or

(B) weathering consists of spreading it and permitting the lead to oxidize to lead oxide.

(10) Positive pressure supplied air hose masks or other approved devices providing equivalent protection shall be worn by all employees inside a tank during welding or other interior hot work unless the tank has been cleaned and all metal surfaces that may get hot are free of rust, scale or other surface foreign matter.

(11) While any employee is in a tank, an attendant shall remain at the entrance opening. The attendant shall be provided with safety equipment similar to that required for employees inside the tank.

(h) Drainage. The requirements of subparagraphs (bb)(1)(A) and (B) of section 8 AAC 61.1180 apply to drainage control.

(i) Agitation and Heating of Liquids in Tanks. The requirements of subsection (aa) of section 8 AAC 61.1180 apply to agitation and heating of liquids in tanks.

(j) Process Equipment Maintenance.

(1) Scaffolding, staging or rigging shall not prevent reasonable egress and ingress to the parts of a processing unit nor hamper operators in gaining access to, or in the operation of, controls in case of an emergency, and shall be promptly removed when no longer needed.

(2) When wood or other combustible scaffolding, staging or rigging is erected near hot equipment, it shall be so spaced or insulated from that equipment that it will not ignite nor char by contact or by radiated heat.

(3) Permanent platforms, temporary stagings or scaffolds provided to give access to processing equipment for maintenance purposes shall not be subjected to loading in excess of their safe capacity. Provisions shall be made for safely supporting and handling by mechanical means, where necessary, manhole covers, pipes, fittings, or other materials.

(4) Vessel manhole covers which are installed vertically and which are not provided with hinges, davits or other means of support shall be fitted with handles or other suitable means for connecting lifting devices when the absence of such devices would constitute a hazard.

(5) Where employees are required to enter a vessel through a manhole on the side or end of the vessel, and where the bottom of the manhole is over three feet six inches above the ground or floor level, a temporary or permanent platform must be provided. The platform shall be located not more than three feet six inches below the bottom of the manhole through which entry is to be made.

(k) Pumps, Pipe Lines, and Valves. The requirements of subsection (v) of section 8 AAC 61.1180 apply to pumps, pipe lines and valve relieving safety devices.

(l) Equipment Leakage and Breakage.

(1) Leakage control. Leaks from pipe lines, piping or from other equipment shall be promptly stopped. Reasonable efforts shall be made by inspection and maintenance to prevent the occurrence of such leaks.

(2) Gauge glasses.

(A) Tubular gauge glasses shall not be used for pressures in excess of 15 pounds per square inch when containing:

8 AAC 61.1190(1)(2)(A)(i)

(i) harmful concentrations of poisonous or corrosive substances;

(ii) liquids at temperatures above 150 degrees F. which will remain in a liquid state if suddenly released to the atmosphere; or

(iii) fluids heated to or above their auto-ignition temperatures.

(B) Employees shall be provided with and shall wear eye protection while pressuring, blowing down, or maintaining tubular gauge glasses that contain gases or liquids at pressures in excess of 15 pounds per square inch.

(C) Employees shall be provided with and shall wear eye and face protection while pressuring, blowing down, or maintaining tubular gauge glasses that contain harmful concentrations of poisonous or corrosive substances.

(D) Tubular gauge glasses that are operated at pressures in excess of 15 pounds per square inch shall be guarded against accidental impact when located within seven feet above or three feet laterally from a working level or passageway.

(E) Tubular gauge glasses which contain poisonous or corrosive substances, or those which are operated in excess of 15 pounds per square inch, shall be provided with valves that can be readily closed in case of glass breakage. Where practicable, ball checks may be used.

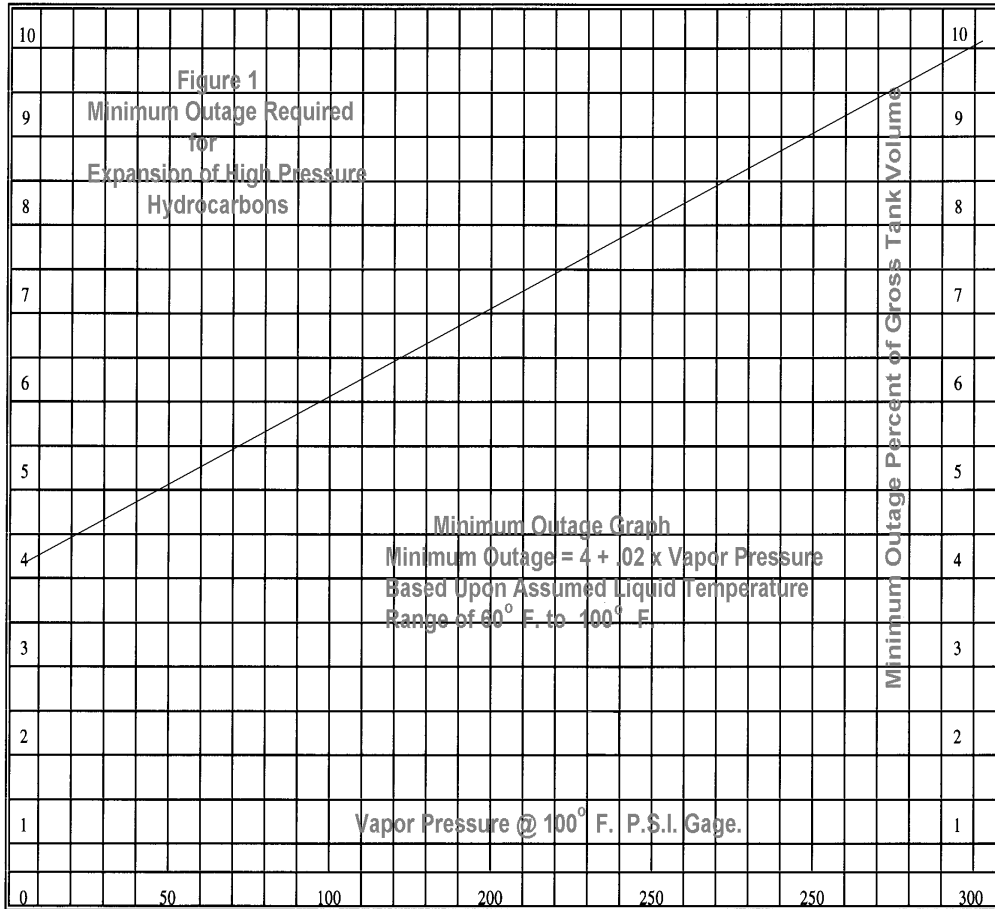
(m) Pressure Vessels. The requirements, of subsection (w) of section 8 AAC 61.1180, apply to pressure vessels.

(n) High-Pressure Hydrocarbons.

(1) Rigid pipe smaller than three-fourths inch (nominal size) in high pressure hydrocarbon service shall be protected if exposed to the hazard of being broken by an externally applied force.

(2) Vessels used for the storage of high pressure hydrocarbons shall have outage for thermal expansion not less than that indicated by Figure 1 for the appropriate vapor pressures.

Figure 1



The outage requirements specified by Figure 1 are based on the assumption that the volume of liquid contained in a vessel will be sufficient to prevent the temperature of the liquid from exceeding 100 degrees F. Where this assumption is not made, outage requirements shall be appropriately increased.

(o) Gas Compressors and Engines. The requirements of subsection (u) of section 8 AAC 61.1180 apply to gas compressors and engines.

(p) Loading and Unloading Facilities and Operations. The requirements, of subsection (cc) of section 8 AAC 61.1180, apply to liquid loading and unloading facilities and operations.

8 AAC 61.1190(q)

(q) Wharves.

(1) Pipe lines which transport petroleum liquids from or to a wharf shall be equipped on shore with valves so located as to be readily accessible and not endangered by a fire on the wharf.

(2) Drip pans, buckets, or other means shall be provided and shall be used to prevent oil spillage upon wharves during loading, disconnecting and draining hoses. After transfer is completed the contents of drip pans and buckets shall be removed and taken to a safe place of disposal.

(3) During the bulk handling of oils, package goods, freight or ship stores shall not be loaded or discharged in such a manner that the sling loads will endanger the hose.

(4) Each employer shall provide at each wharf under his jurisdiction, at least two ring life buoys or equivalent and at least one additional life buoy or equivalent for each 200 feet of wharf length where wharves are over 400 feet in total length. However, this requirement does not apply to the approach section of a wharf if each maintenance employee while working below such approach or upon such approach if not protected by adequate railings, is provided with and wears a life jacket or other device capable of keeping him afloat.

(5) Each life buoy shall have at least 90 feet of one-half inch diameter line attached to it. The line shall be of manila fiber or equivalent and shall be securely fastened to the buoy but not to the grabline of the buoy.

(6) Water lights for use at petroleum wharves shall not be of a type which creates a source of ignition.

(r) Laboratories and Pilot Plants.

(1) Fired experimental equipment, fired pilot plant units, and unfired equipment which is a part of, and adjacent to, the experimental or pilot plant units, shall be located in an open area or enclosure isolated from unrelated gas or light oil processing equipment. This requirement does not preclude the temporary use of operating equipment for experimental or pilot plant purposes when protection equivalent to isolation is provided. For purposes of this section, "experimental equipment" does not include equipment used in routine testing or analysis.

(2) Provision shall be made to handle light oils with a minimum release of gases and vapors.

(3) Safe access shall be provided to elevated parts of equipment where employees are required to perform work.

(4) Containers of samples, stocks, or cuts of light oil required for current activities shall be kept in a designated place isolated from sources of ignition, and shall be marked or labeled to identify them as light oil.

(5) A separate room or building shall be provided for the storage of petroleum samples. Samples of light oils not required for current use in the laboratory, but which must be preserved, shall be stored in that room or building.

(6) Light oil samples must be safely disposed of. When sinks are used for the disposal of light oils, the drains to the sinks must be properly trapped and vented.

(7) Adequate means of extinguishing burning clothing of employees must be readily accessible in a laboratory where combustible gases or light oils are exposed to sources of ignition.

(Eff. 12/6/95, Register 136)