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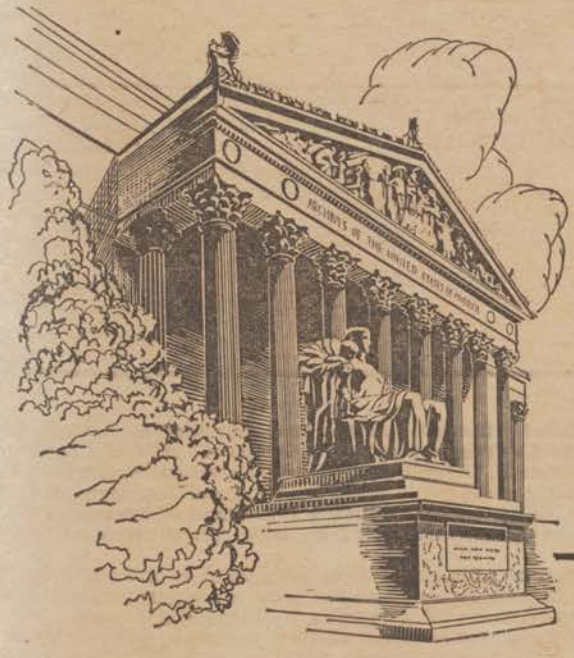
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LIST OF CFR SECTIONS AFFECTED

1949–1963

This volume contains a compilation of the "List of Sections Affected" for all titles of the Code of Federal Regulations for the years 1949 through 1963. All sections of the CFR which have been expressly affected by documents published in the daily Federal Register are enumerated.

Reference to this list will enable the user to find the precise text of CFR provisions which were in force and effect on any given date during the period covered.

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[Amdt. 8]

PART 724—BURLEY, FIRE-CURED, DARK AIR-CURED, VIRGINIA SUN-CURED, CIGAR-BINDER (TYPES 51 AND 52), CIGAR FILLER AND BINDER (TYPES 42, 43, 44, 53, 54, AND 55), AND MARYLAND TOBACCO

Subpart—Tobacco Allotment and Marketing Quota Regulations, 1968–69 and Subsequent Marketing Years

MISCELLANEOUS AMENDMENTS

This amendment is issued pursuant to and in accordance with the Agricultural Adjustment Act of 1938, as amended (7 U.S.C. 1281, et seq.), to make certain amendments to the regulations (33 F.R. 15521, as amended).

The purpose of this amendment is to (1) change Farmer Programs Division to Commodity Programs Division in the definition of Director, (2) expand the income requirement for new farm eligibility to include the income from farming rather than income from the farm for which the allotment is requested, (3) allow bona fide tobacco production experience gained while participating as a member of a partnership to qualify an applicant under the experience requirement for a new farm tobacco allotment, (4) change the date for filing new farm cigar tobacco allotment applications, surrending cigar allotment acreage, and requesting reallocation of surrendered acreage to March 5, (5) permit the county committee to redelegate authority to the County Executive Director for approving lease and transfer agreements, (6) require annual recomputation of allotments and quotas for transfers which extend for more than 1 year, (7) require signatures of lienholder(s) and mortgagee(s) for transfers which extend for more than 1 year, (8) permit the county committee to distinguish between false information knowingly given by the applicant and that unknowingly given in deciding the effective date of cancellation of a new farm allotment, and (9) require that, if the warehouseman gains possession of a basket of tobacco through a rejected producer sale after bill-out, such tobacco be identified as resale tobacco.

Tobacco producers are now making plans for the 1971 crop and it is essential that this amendment be made effective as soon as possible. Accordingly, it is hereby determined and found that compliance with the notice, public procedure and 30-day effective date requirements of 5 U.S.C. 553 is impracticable and contrary to the public interest, and this amendment shall become effective upon filing of this document with the Director, Office of the Federal Register.

The amendment is as follows:

1. Paragraph (h) of § 724.51 is amended to read as follows:

§ 724.51 Definitions.

* * * * *

(h) *Director.* The Director, or Acting Director, Commodity Programs Division, Agricultural Stabilization and Conservation Service, U.S. Department of Agriculture.

2. Subparagraphs (6) and (7) of paragraph (b) and paragraph (d) of § 724.63 are amended to read as follows:

§ 724.63 Determination of acreage allotments for new farms.

* * * * *

(b) * * *

(6) (i) The operator (each partner where the farm operator is a partnership) shall expect to obtain, during the current year, more than 50 percent of his income from the production of agricultural commodities or products. In making this computation of income from farming, no value will be allowed for estimated return from the production of the requested allotment. However, in addition to the value of agricultural products sold, credit will be allowed for the estimated value of home gardens, livestock and livestock products, poultry, or other agricultural products produced for consumption on the farm. Where the farm operator is a corporation, it must have no major corporate purpose other than operation and ownership where applicable, of such farm, and the officers and general manager of the corporation must expect to obtain more than 50 percent of their income from farming. Dividends and salary from the corporation shall be considered as income from farming.

(ii) When the farm operator is a low income farmer:

(*a*) The county committee may waive the income provision in subdivision (i) of this subparagraph provided they determine that the farm operator's income from both farm and nonfarm sources, is so low that it will not provide a reasonable standard of living for the operator and his family, and a State committee representative approves such action.

(*b*) The county committee must exercise good judgment to see that this determination is reasonable in light of all pertinent factors and that this special provision is made applicable only to those who qualify.

(*c*) In making this determination, the county committee shall consider such factors as size and type of farming operations, estimated net worth, estimated gross family farm income, estimated family off-farm income, number of dependents, and other factors affecting the individual's ability to provide a reasonable standard of living for himself and family.

(7) The farm operator shall have had experience in producing, harvesting, and marketing the kind of tobacco requested in the application either as a sharecropper, tenant, or farm operator during at least 2 of the 5 years immediately preceding the year for which the new farm allotment is requested. Bona fide tobacco production experience gained by a person as a member of a partnership shall be accepted as experience gained in meeting this requirement. If the applicant was in the armed services during any part or all of the 5-year period, the experience period shall be expanded, year for year, for each year of military service during such 5-year period. The production of tobacco of the kind requested in the application on a farm for which no farm acreage allotment for such kind of tobacco was established shall not be deemed as experience in growing tobacco for this purpose.

* * * * *

(d) Any improperly established new farm allotment is subject to cancellation under the provision in § 724.95.

3. Paragraphs (c) and (d) are amended and a new paragraph (s) is added to § 724.68 as follows:

§ 724.63 Lease and transfer of tobacco acreage allotments.

* * * * *

(c) The lease and transfer of any allotment or any part thereof shall not be effective until a copy of the lease, determined by the county committee to be in compliance with the provisions of this section, is filed with the county committee not later than May 1 of the current year, except that a lease shall be effective if (1) the county committee, with the approval of the State executive director, finds that it was agreed upon no later than May 1 of the current year and (2) the terms of the lease in writing are filed with the county committee no later than July 31 of the current year. The county committee may redelegate authority to approve leasing agreements to the County Executive Director.

(d) The county committee shall determine a normal yield per acre, in accordance with the provisions of § 724.62 in the case of old farms, and, in the case of new farms, § 724.64 for each farm from which, and for each farm to which, a tobacco acreage allotment or any part

thereof is leased. If the normal yield determined by the county committee for the farm to which the allotment acreage is transferred does not exceed the normal yield determined by the county committee for the farm from which the allotment acreage is transferred by more than 10 percent, the lease and transfer shall be approved acre for acre. If the normal yield determined by the county committee for the farm to which the allotment acreage is transferred exceeds the normal yield for the farm from which the allotment acreage is transferred by more than 10 percent, the county committee shall make a downward adjustment in the amount of the allotment acreage transferred by multiplying the normal yield established for the farm from which the allotment acreage is transferred by the acreage being transferred and dividing the result by the normal yield established for the farm to which the allotment acreage is transferred. In the case of transfers of allotment for 2 or more years, the productivity adjustment and amount of allotment so transferred shall be redetermined by the county committee each year the transfer remains in effect.

* * * * *

(s) No transfer of allotment other than by annual lease shall be made from a farm subject to a mortgage or other lien unless the transfer is agreed to in writing by the lienholder.

4. Subparagraph (7) of paragraph (c) of § 724.72 is amended to read as follows:

§ 724.72 Determination of acreage allotments for new farms for Cigar-binder (types 51 and 52) and Cigar-filler and binder (types 42, 43, 44, 53, 54, and 55) tobacco for 1970–71 and subsequent marketing years.

* * * * *

(c) * * *

(7) A written application is filed by the farm operator at the office of the county committee on or before March 5 of the calendar year for which the application is made.

* * * * *

§ 724.73 [Amended]

5. The first sentence of paragraph (a) and the last sentence of paragraph (b) of § 724.73 are amended by changing the date for surrendering allotment to the State committee and requesting reallocation of surrendered acreage from the county committee from March 27 to March 5.

6. Paragraph (d) of § 724.95 is amended to read as follows:

§ 724.95 Producer's records and reports.

* * * * *

(d) *Cancellation of new farm allotment.* Any new farm allotment approved under this subpart which was determined by the county committee on the basis of incomplete or inaccurate information knowingly furnished by the applicant shall be canceled by the county committee as of the date the allotment was established. Where incomplete or inaccurate information was unknowingly furnished by the applicant, the allotment shall be canceled effective for the current crop year except where the provisions of § 724.66(d) apply.

7. Subparagraph (11) of paragraph (g) of section 724.96 is amended to read as follows:

§ 724.96 Warehouseman's records and reports, except Burley tobacco.

* * * * *

(g) * * *

(11) Where a producer rejects the sale of a basket of tobacco, and the tobacco has been billed out and the bills presented to the buyer, the warehouseman shall not change the (i) marketing card, or (ii) the MQ–80 reporting the sale. If the warehouseman gains possession of the tobacco and it is resold by such warehouseman, it shall be identified as resale tobacco.

8. Paragraph (i) is added to § 724.97 to read as follows:

§ 724.97 Warehouseman's records and reports for Burley tobacco.

* * * * *

(i) *Handling rejected (producer) sale after bill-out.* Where a producer rejects the sale of a basket of tobacco, and the tobacco has been billed out and bills presented to the buyer, the warehouseman shall not change the (1) MQ–76, (2) MQ–72–1, or (3) MQ–80 reporting the sale. If the warehouseman gains possession of the tobacco and it is resold by such warehouseman, it shall be identified as resale tobacco.

(Secs. 301, 313, 316, 318, 373, 375, 52 Stat. 38, as amended, 47, as amended, 75 Stat. 469, as amended, 80 Stat. 120, as amended, 52 Stat. 65, as amended, 66, as amended; 7 U.S.C. 1301, 1313, 1314b, 1314d, 1373, 1375)

Effective date: Date of filing this document with the Director, Office of the Federal Register.

Signed at Washington, D.C., on January 26, 1971.

KENNETH E. FRICK,
Administrator, Agricultural Stabilization and Conservation Service.

[FR Doc.71–1342 Filed 2–1–71;8:48 am]

Chapter IX—Consumer and Marketing Service (Marketing Agreements and Orders; Fruits, Vegetables, Nuts), Department of Agriculture

[Tangerine Reg. 40, Amdt. 5]

PART 905—ORANGES, GRAPEFRUIT, TANGERINES, AND TANGELOS GROWN IN FLORIDA

Limitation of Shipments

Findings. (1) Pursuant to the marketing agreement, as amended, and Order No. 905, as amended (7 CFR Part 905), regulating the handling of oranges, grapefruit, tangerines, and tangelos grown in Florida, effective under the applicable provisions of the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601–674), and upon the basis of the recommendations of the committees established under the aforesaid amended marketing agreement and order, and upon other available information it is hereby found that the limitation of shipments of tangerines, as hereinafter provided, will tend to effectuate the declared policy of the act.

(2) It is hereby further found that it is impracticable and contrary to the public interest to give preliminary notice, engage, in public rule-making procedure, and postpone the effective date of this amendment until 30 days after publication thereof in the FEDERAL REGISTER (5 U.S.C. 553) because the time intervening between the date when information upon which this amendment is based became available and the time when this amendment must become effective in order to effectuate the declared policy of the act is insufficient; and this amendment relieves restrictions on the handling of tangerines grown in Florida.

Order. The provisions of paragraph (a)(1) (i) and (ii) of § 905.528 (Tangerine Reg. 40; 35 F.R. 16075, 17167, 17938, 19245; 36 F.R. 41), are amended to read as follows:

§ 905.528 Tangerine Regulation 40.

(a) * * *

(1) * * *

(i) Any tangerines, grown in the production area, which do not grade at least U.S. No. 2; or

(ii) Any tangerines, grown in the production area, which are of a size smaller than $2\frac{2}{16}$ inches in diameter, except that a tolerance of 10 percent, by count, of tangerines smaller than such minimum diameter shall be permitted, which tolerance shall be applied in accordance with the provisions for the application of tolerances specified in said U.S. Standards for Florida Tangerines.

* * * * *

(Secs. 1–19, 48 Stat. 31, as amended; 7 U.S.C. 601–674)

Dated, January 28, 1971, to become effective February 1, 1971.

PAUL A. NICHOLSON,
Deputy Director, Fruit and Vegetable Division, Consumer and Marketing Service.

[FR Doc.71–1337 Filed 2–1–71;8:47 am]

[Orange Reg. 67, Amdt. 2]

PART 905—ORANGES, GRAPEFRUIT, TANGERINES, AND TANGELOS GROWN IN FLORIDA

Limitation of Shipments

Findings. (1) Pursuant to the marketing agreement, as amended, and Order No. 905, as amended (7 CFR Part 905), regulating the handling of oranges, grapefruit, tangerines, and tangelos grown in Florida, effective under the applicable provisions of the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601–674), and upon the basis of the recommendations of the committees established under the aforesaid amended marketing agreement and order, and upon other available information, it is hereby found that

the limitation of shipments of Murcott Honey oranges, as hereinafter provided, will tend to effectuate the declared policy of the act.

(2) It is hereby further found that it is impracticable and contrary to the public interest to give preliminary notice, engage in public rule-making procedure, and postpone the effective date of this amendment until 30 days after publication in the FEDERAL REGISTER (5 U.S.C. 553) because the time intervening between the date when information upon which this amendment is based became available and the time when this amendment must become effective in order to effectuate the declared policy of the act is insufficient; and this amendment relieves restrictions on the handling of Murcott Honey oranges grown in Florida.

Order. In § 905.529 (Orange Reg. 67; 35 F.R. 18741, 19245, 19246), the provisions of paragraph (a)(2)(viii) are amended to read as follows:

§ 905.529 Orange Regulation 67.

(a) * * *

(2) * * *

(viii) Any Murcott Honey oranges, grown in the production area, which are of a size smaller than 2$^{9}/_{16}$ inches in diameter, except that a tolerance of 10 percent, by count, of Murcott Honey oranges smaller than such minimum diameter shall be permitted, which tolerances shall be applied in accordance with the provisions for the application of tolerances specified in said U.S. Standards for Florida Oranges and Tangelos.

* * * * *

(Secs. 1–19, 48 Stat. 31, as amended; 7 U.S.C. 601–674)

Dated: January 28, 1971, to become effective February 1, 1971.

PAUL A. NICHOLSON,
Deputy Director, Fruit and Vegetable Division, Consumer and Marketing Service.

[FR Doc.71–1338 Filed 2–1–71;8:47 am]

[Lemon Reg. 464, Amdt. 1]

PART 910—LEMONS GROWN IN CALIFORNIA AND ARIZONA

Limitation of Handling

(a) *Findings.* (1) Pursuant to the marketing agreement, as amended, and Order No. 910, as amended (7 CFR Part 910), regulating the handling of lemons grown in California and Arizona, effective under the applicable provisions of the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601–674), and upon the basis of the recommendations and information submitted by the Lemon Administrative Committee, established under the said amended marketing agreement and order, and upon other available information, it is hereby found that the limitation of handling of such lemons, as hereinafter provided, will tend to effectuate the declared policy of the act.

(2) It is hereby further found that it is impracticable and contrary to the public interest to give preliminary notice, engage in public rule-making procedure, and postpone the effective date of this amendment until 30 days after publication hereof in the FEDERAL REGISTER (5 U.S.C. 553) because the time intervening between the date when information upon which this amendment is based became available and the time when this amendment must become effective in order to effectuate the declared policy of the act is insufficient, and this amendment relieves restriction on the handling of lemons grown in California and Arizona.

(b) *Order, as amended.* The provisions in paragraph (b)(1) (i) and (ii) of § 910.764 (Lemon Reg. 464, 36 F.R. 1190) are hereby amended to read as follows:

§ 910.764 Lemon Regulation 464.

* * * * *

(b) * * *

(i) District 1: 44,000 cartons;

(ii) District 2: 81,000 cartons.

* * * * *

(Secs. 1–19, 48 Stat. 31, as amended; 7 U.S.C. 601–674)

Dated: January 28, 1971.

PAUL A. NICHOLSON,
Deputy Director, Fruit and Vegetable Division, Consumer and Marketing Service.

[FR Doc.71–1377 Filed 2–1–71;8:51 am]

PART 959—ONIONS GROWN IN SOUTH TEXAS

Limitation of Shipments

Notice of rule making with respect to a proposed limitation of shipments regulation to be made effective under Marketing Agreement No. 143 and Order No. 959 (7 CFR Part 959), both as amended, regulating the handling of onions grown in designated counties in South Texas, was published in the FEDERAL REGISTER, November 28, 1970 (35 F.R. 18201). This program is effective under the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601 et seq.).

The notice afforded interested persons an opportunity to file data, views, or arguments pertaining thereto not later than thirty days after publication. None was filed.

Statement of consideration. The recommendations of the committee reflect its appraisal of the expected volume and composition of the 1971 crop of South Texas onions and of the marketing prospects for the shipping season which is expected to begin on or about March 1.

The grade and size requirements herein are recommended to prevent culls and poor quality onions, as well as undesirable sizes, from being distributed in fresh market channels. This should provide consumers with desirable onions, at reasonable prices and at the same time result in higher returns to producers for the better grades and preferred sizes and enhance the reputation of South Texas onions.

The container requirement should prevent the use of off-size or deceptive containers which could adversely affect the reputation and returns of South Texas onions. However, it would not preclude the use of containers customarily packed for the retail trade and other designated special purpose containers which have been the subject of experimental shipments for the past five seasons, provided they comply with the special purpose shipments requirements.

The prohibition on packaging and loading onions on Sunday is recommended to provide more orderly marketing by tailoring shipments from the production area more closely to the ability of receiving markets to accept marketings at reasonable prices.

Findings. After consideration of all relevant matters, including the proposal set forth in the aforesaid notice which was recommended by the South Texas Onion Committee, established pursuant to the said amended marketing agreement and order, it is hereby found that the limitation of shipments regulation, as hereinafter set forth, will tend to effectuate the declared policy of the act.

The regulation is as follows:

During the period beginning March 1, 1971, through May 29, 1971, no handler may (1) handle any lot of onions grown in the production area, except red onions, unless such onions meet the grade requirements of paragraph (a) of this section, one of the applicable size

§ 959.311 Limitation of shipments.

requirements of paragraph (b) of this section, the container requirements of paragraph (c) of this section, and the inspection requirements of paragraph (f) of this section, or unless such onions are handled in accordance with the provisions of paragraphs (d) or (e) of this section, or (2) package or load onions on Sundays.

(a) *Minimum grade.* Not to exceed 20 percent defects of U.S. No. 1 grade. In percentage grade lots, tolerances for serious damage shall not exceed 10 percent including not more than 2 percent decay. Double the lot tolerance shall be permitted in individual packages in percentage grade lots. Application of tolerances in U.S. Grade Standards shall apply to in-grade lots.

(b) *Size requirements.* (1) "Small"—1 to 2¼ inches in diameter, and limited to whites only:

(2) "Repacker"—1¾ to 3 inches in diameter, with 60 percent or more 2 inches in diameter or larger;

(3) 2 to 3½ inches in diameter; or

(4) "Jumbo"—3 inches or larger in diameter.

(c) *Container requirements.* (1) 25-pound bags, with not to exceed in any lot an average net weight of 27½ pounds per bag, and with outside dimensions not larger than 29 inches by 31 inches; or

(2) 50-pound bags, with not to exceed in any lot an average net weight of 55 pounds per bag, and with outside dimensions not larger than 33 inches by 38½ inches.

(3) These container requirements shall not be applicable to onions sold to Federal Agencies.

(d) *Minimum quantity exemption.* Any handler may handle, only as individual shipments and other than for resale, not more than 100 pounds of onions per day, in the aggregate, without regard to the requirements of this section or to the inspection and assessment requirements of this part.

(e) *Special purpose shipments and culls.* (1) Onions may be handled in containers customarily packed for the retail trade and in other designated special purpose containers as follows:

(i) Each handler desiring to make such shipments shall first apply to the committee for and obtain a Certificate of Privilege to make such shipments.

(ii) After obtaining an approved Certificate of Privilege, each handler may handle onions packed in 2-, 3-, or 5-pound containers customarily packed for the retail trade, or 50-pound cartons, if they meet the grade and size requirements of paragraphs (a) and (b) of this section and if they are handled in accordance with the reporting requirements established in subparagraph (2) of this paragraph on such shipments: *Provided,* That shipments of 2-, 3-, and 5-pound containers shall not exceed 10 percent of a handler's total weekly onion shipments: *And provided further,* That shipments of 50-pound cartons shall not exceed 10 percent of a handler's total weekly onion shipments of all onions allowed to be marketed under this section.

(iii) The average gross weight per lot of onions packed in master containers shall not exceed 115 percent of the designated net contents.

(iv) The average net weight per lot of 50-pound cartons shall not exceed 55 pounds.

(2) *Reporting requirements for shipments in designated special purpose containers.* Each handler who handles such shipments of onions in containers customarily packed for the retail trade and in other designated special purpose containers, shall report thereon to the committee, the inspection certificate numbers, the grade and size of onions packed, and the size of the containers in which such onions were handled.

Such reports, in accordance with § 959.80, shall be furnished to the committee in such manner, on such forms and at such times as it may prescribe. Also, each handler of such shipments of onions shall maintain records of such markettings, pursuant to § 959.80(c). Such records shall be subject to review and audit by the committee to verify reports thereon.

(3) *Onions failing to meet requirements.* Onions failing to meet the grade, size, and container requirements of this section, and not exempted under paragraph (d) of this section, may be handled only pursuant to § 959.126. Shipments for relief or charity may be handled without regard to inspection and assessment requirements.

(f) *Inspection.* (1) No handler may handle any onions regulated hereunder (except pursuant to paragraphs (d) or (e)(3) of this section) unless an appropriate inspection certificate has been issued with respect thereto and the certificate is valid at the time of shipment.

(2) No handler may transport or cause the transportation by motor vehicle of any shipment of onions for which an inspection certificate is required unless each such shipment is accompanied by a copy of the inspection certificate applicable thereto or by documentary evidence on forms furnished by the committee identifying truck lots to which a valid inspection certificate is applicable and a copy of such inspection certificate or committee document, upon request, is surrendered to authorities designated by the committee.

(3) For purpose of operation under this part each inspection certificate or committee form required as evidence of inspection is hereby determined to be valid for a period not to exceed 72 hours following completion of inspection as shown on the certificate.

(g) *Definitions.* The term "U.S. No. 1" shall have the same meaning as set forth in the U.S. Standards for Grades of Bermuda-Granex-Grano Type Onions (§§ 51.3195–51.3209 of this title), or in the U.S. Standards for Grades of Onions (Other Than Bermuda-Granex-Grano and Creole Types) (§§ 51.2830–51.2854 of this title), whichever is applicable to the particular variety.

All terms used in this section shall have the same meaning as when used in Marketing Agreement No. 143, as amended, and this part.

(Secs. 1–19, 48 Stat. 31, as amended; 7 U.S.C. 601–674)

Dated: January 27, 1971, to become effective March 1, 1971.

FLOYD F. HEDLUND,
Director, Fruit and Vegetable Division, Consumer and Marketing Service.

[FR Doc.71-1336 Filed 2-1-71;8:47 am]

Chapter X—Consumer and Marketing Service (Marketing Agreements and Orders; Milk), Department of Agriculture

[Milk Order No. 64]

PART 1064—MILK IN GREATER KANSAS CITY MARKETING AREA

Order Suspending Certain Provisions

This suspension order is issued pursuant to the provisions of the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601 et seq.), and of the order regulating the handling of milk in the Greater Kansas City marketing area.

It is hereby found and determined that for the months of February and March 1971 the following provisions of the order do not tend to effectuate the declared policy of the Act.

1. In § 1064.44, paragraph (c) in its entirely.

2. In the introductory text of § 1064.44 (d) preceding subparagraph (1), the provision: ", located not more than 400 miles, by the shortest highway distance as determined by the market administrator, from the nearer of the city halls of Kansas City, Mo., or Topeka, Kans."

Statement of consideration. Suspension of the provisions was requested by a cooperative operating a pool supply plant located in Faribault, Minn. Suspension will render inoperative the present order provisions requiring mandatory Class I classification of milk transferred to a nonpool plant located 400 miles or more from the nearer of Kansas City or Topeka. The cooperative operates a nonpool cheese manufacturing plant at Pine Island, Minn., located 427 miles from Kansas City. It also operates another supply plant located at Pine Island that is presently pooled under the Southeastern Minnesota-Northern Iowa order. The cooperative States, however, that it intends to qualify the latter plant for pooling under the Kansas City order.

The cooperative requests suspension of the order provisions in order that its milk in excess to its fluid milk outlets in Kansas City may be moved to the nonpool cheese manufacturing plant at Pine Island from both the Faribault supply plant and the Pine Island supply plant, and still be classified and priced as Class III milk under the Kansas City order. Without suspension, such milk would be classified and priced as Class I milk, although used in the production of a manufactured dairy product.

Suspension of the 400-mile diversion limitation is necessary to accommodate the orderly disposition of seasonally increased reserve milk supplies, particularly since manufacturing plants near the farms of some producers now supplying the market are located in Minnesota.

It is hereby found and determined that notice of proposed rule making, public procedure thereon, and thirty days' notice of the effective date hereof are impractical, unnecessary, and contrary to the public interest in that:

(a) This suspension is necessary to reflect current marketing conditions and to maintain orderly marketing conditions in the marketing area in that it will accommodate the efficient disposal of reserve milk supplies into manufactured dairy product uses during months of seasonally increased milk production;

(b) This suspension order does not require of persons affected substantial or extensive preparation prior to the effective date; and

(c) This suspension has been in effect since November 1, 1970. Producers requested continuance of this suspension at a public hearing held December 15, 1970. No one opposed it. Interim action is necessary during the pendency of proceedings on amendments to the order.

Therefore, good cause exists for making this order effective February 1, 1971.

It is therefore ordered, That the aforesaid provisions of the order are hereby suspended for the months of February and March 1971.

(Secs. 1–19, 48 Stat. 31, as amended; 7 U.S.C. 601–674)

Effective date: February 1, 1971.

Signed at Washington, D.C., on January 28, 1971.

PHILIP C. OLSSON,
Acting Assistant Secretary.

[FR Doc.71–1340 Filed 2–1–71;8:47 am]

Title 17—COMMODITY AND SECURITIES EXCHANGES

Chapter II—Securities and Exchange Commission

[Release No. 33–5125]

PART 230—GENERAL RULES AND REGULATIONS, SECURITIES ACT OF 1933

Small Offering Exemption

The Securities and Exchange Commission has amended Regulation A (17 CFR 230.251 et seq.) to increase the maximum amount of the offering price of securities which may be offered thereunder from $300,000 to $500,000. Regulation A exempts from registration under the Securities Act of 1933 securities, the offering price of which is not in excess of that amount, upon compliance with the terms and conditions of the regulation. Among the terms and conditions of the regulation are requirements that there be filed with the Commission a notification and an offering circular containing certain specified information, and the use of such offering circular in the offering and sale of the securities.

The amendment of the regulation to increase the maximum amount of the offering price of securities which may be offered thereunder has been adopted pursuant to Public Law 91–565, amending section 3(b) of the Act, which was passed by Congress on December 7, 1970, and signed by President Nixon on December 19, 1970.

The Commission has under consideration certain additional amendments to Regulation A which will be published for comment at a later date.

Commission action: Section 230.254 of Chapter II of Title 17 of the Code of Federal Regulations is amended to read as follows:

§ 230.254 **Amount of securities exempted.**

(a) The aggregate offering price of all of the following securities of the issuer, its predecessors and all of its affiliates which were incorporated or organized, or became affiliates of the issuer, within the past 2 years, shall not exceed $500,000:

* * * * *

The foregoing action has been taken pursuant to the Securities Act of 1933, particularly sections 3(b) and 19(a) thereof. Because the amendment of Section 3(b) of the Act has received extensive publicity and has been the subject of hearings by Congressional committees, the Commission finds that notice and procedure pursuant to 5 U.S.C. 553 are unnecessary. The Commission also finds that because the amendment relieves a previously existing restriction it may be made effective immediately upon publication. Accordingly, the amendment shall become effective on January 7, 1971.

(Secs. 3(b), 19(a), 48 Stat. 75, 85, 908, 59 Stat. 167, 15 U.S.C. 77c(b), 77s(a))

By the Commission, January 7, 1971.

[SEAL] ORVAL L. DUBOIS,
Secretary.

[FR Doc.71–1322 Filed 2–1–71;8:45 am]

[Release No. 33–5121]

PART 231—INTERPRETATIVE RELEASES RELATING TO THE SECURITIES ACT OF 1933 AND GENERAL RULES AND REGULATIONS THEREUNDER

Use of Legends and Stop-Transfer Instructions as Evidence of Nonpublic Offering

The Securities and Exchange Commission has authorized the publication of the following statement which sets forth the policy of the Commission's Division of Corporation Finance in connection with the availability of the exemption under section 4(2) from the registration provisions of the Securities Act of 1933. Section 4(2) of the Act provides for an exemption for "transactions by an issuer not involving any public offering," the so-called "private offering exemption."

Whether the transaction is one not involving any public offering is essentially a question of fact and necessitates a consideration of all the surrounding circumstances, including such factors as the relationship between the offerees and the issuer, the nature, scope, size, type and manner of the offering. The availability of the exemption turns on the question of "* * * the need of the offerees for the protection afforded by registration." See S.E.C. v. Ralston Purina Company, 346 U.S. 119 (1953) and Securities Act Release No. 4552 (1962).

An important factor to be considered is whether the securities offered have come to rest in the hands of the initially informed group or whether the purchasers are merely conduits for a wider distribution. It is essential that the issuer of the securities take careful precautions to assure that a public offering does not result through resales of securities purchased in transactions meeting the tests set forth in the Ralston Purina case, for, if in fact the purchasers do acquire the securities with a view to distribution, the seller assumes the risk of possible violation of the registration requirements of the Act and consequent civil and criminal liabilities.

These possibilities have led to the practice whereby issuers procure from the initial purchasers representations that they have acquired the securities for investment. A statement from an initial purchaser that he is purchasing for investment is not conclusive as to his actual intent. However, since the terms of an exemption are to be strictly construed against a claimant who has the burden of proving its availability, in many cases the issuer has placed a legend on such securities and stop-transfer instructions have been issued to the transfer agent. These precautions—placing the legend on the securities and issuing the stop-transfer orders—are not to be regarded as a basis for exemption, but they have proved in many cases to be an effective means of preventing illegal distributions. The use of the legend also alerts the buyer to the restricted character of the securities he has acquired and thus calls attention to material facts which assist in the protection of public investors.

The Legal and Compliance Committee of the Association of Stock Exchange Firms has recommended on a number of occasions that the Exchanges adopt a requirement that issuers of listed securities legend certificates that represent securities issued under an investment restriction. The American Stock Exchange requires that investment stock be legended because it feels that this restrictive legend would aid brokers in carrying out their responsibilities under the Exchange's Rule 411 which requires members to use diligence to learn the essential facts relative to every customer and to every order or account accepted.

The Division will regard the presence or absence of an appropriate legend and stop-transfer instructions as a factor in considering whether the circumstances surrounding the offering are consistent with the exemption under section 4(2) of the Act. Consequently, issuers are urged to stamp or print on the face of certificates or other instruments evidencing restricted securities a conspicuous legend referring to the fact that the securities have not been registered under the Securities Act of 1933 and may be offered and sold only if registered pursuant to the provisions of that Act or if an exemption from registration is available. Issuers are also urged to issue stop-transfer instructions to prevent the transfer of the securities in such cases.

By the Commission, December 30, 1970.

[SEAL] ORVAL L. DUBOIS,
Secretary.

[FR Doc.71–1321 Filed 2–1–71;8:45 am]

Title 21—FOOD AND DRUGS

Chapter I—Food and Drug Administration, Department of Health, Education, and Welfare

SUBCHAPTER C—DRUGS

PART 141—TESTS AND METHODS OF ASSAY OF ANTIBIOTIC AND ANTIBIOTIC-CONTAINING DRUGS

PART 148v—CANDICIDIN

Miscellaneous Amendments

A. Effective on publication in the FEDERAL REGISTER (2–2–71), Part 148v is republished as follows to incorporate editorial and nonrestrictive technical changes. This order revokes all prior publications.

Sec.
148v.1 Candicidin.
148v.2 Candicidin vaginal tablets.
148v.3 Candicidin vaginal ointment.
148v.4 Candicidin vaginal capsules.

AUTHORITY: The provisions of this Part 148v issued under sec. 507, 59 Stat. 463, as amended; 21 U.S.C. 357.

§ 148v.1 Candicidin.

(a) *Requirements for certification*—(1) *Standards of identity, strength, quality, and purity.* Candicidin is a brown to yellow powder. It is sparingly soluble in water; very slightly soluble in ethyl alcohol, butyl alcohol, and acetone. It is so purified and dried that:

(i) Its potency is not less than 1,000 micrograms of candicidin per milligram on an anhydrous basis.

(ii) Its loss on drying is not more than 4 percent.

(iii) Its pH is not less than 8.0 nor more than 10.0 in a 1 percent aqueous suspension.

(iv) Its ultraviolet absorption spectrum is characteristic of a conjugated heptaene and is qualitatively the same as that of the candicidin working standard.

(2) *Labeling.* It shall be labeled in accordance with the requirements of § 148.3(b) of this chapter.

(3) *Requests for certification; samples.* In addition to the requirements of § 146.2 of this chapter, each such request shall contain:

(i) Results of tests and assays on the batch for potency, loss on drying, pH, and identity.

(ii) Samples required: 10 packages, each containing approximately 300 milligrams.

(b) *Tests and methods of assay*—(1) *Potency.* Proceed as directed in § 141.111 of this chapter, preparing the sample for assay as follows: Dissolve a portion of the sample in sufficient dimethylsulfoxide to yield an estimated concentration of 1,000 micrograms of candicidin activity per milliliter. Further dilute an aliquot with sterile distilled water to the reference concentration of 0.06 microgram of candicidin activity per milliliter (estimated).

(2) *Loss on drying.* Proceed as directed in § 141.501(b) of this chapter.

(3) *pH.* Proceed as directed in § 141.503 of this chapter, using a 1 percent aqueous suspension.

(4) *Identity*—(i) *Preparation of aqueous alcohol solution.* Prepare an aqueous alcohol solution by mixing 53 volumes of ethyl alcohol and 47 volumes of water.

(ii) *Preparation of standard solution.* Grind a small portion of the candicidin working standard to a fine powder with a mortar and pestle. Accurately weigh an amount equivalent to 20,000 micrograms of candicidin activity and transfer it to a 100-milliliter volumetric flask. Add about 50 milliliters of the aqueous alcohol solution and shake to effect complete dissolution. Bring to volume with the aqueous alcohol solution and mix well. Transfer a 25-milliliter aliquot to a 100-milliliter volumetric flask and bring to volume with the aqueous alcohol solution. This solution contains 50 micrograms of candicidin activity per milliliter.

(iii) *Preparation of sample solution.* Proceed as directed in subparagraph (ii) of this paragraph.

(iv) *Procedure.* Using a suitable recording spectrophotometer, record the absorption spectra of the standard solution and the sample solution between the wavelengths of 330 and 410 nanometers with the aqueous alcohol solution as the reference solution. Compare the absorption spectra of the standard solution and the sample solution. They should exhibit absorption maxima and minima at the same wavelengths, which are nominally 342, 359, 378, and 397 nanometers for the maxima and 348, 366, and 390 nanometers for the minima.

§ 148v.2 Candicidin vaginal tablets.

(a) *Requirements for certification*—(1) *Standards of identity, strength, quality, and purity.* Candicidin vaginal tablets are tablets composed of candicidin with suitable binders, diluents, and lubricants. Each tablet contains 3 milligrams of candicidin. Its potency is satisfactory if it is not less than 90 percent and not more than 150 percent of the number of milligrams of candicidin that it is represented to contain, except that for the issuance of a certificate for each batch, the candicidin content must be not less than 115 percent and not more than 150 percent of the number of milligrams of candicidin that it is represented to contain. The tablets shall disintegrate within 30 minutes. The loss on drying is not more than 1 percent. The candicidin used in making the batch conforms to the standards of § 148v.1(a)(1).

(2) *Labeling.* The drug shall be labeled in accordance with the requirements of § 148.3 of this chapter.

(3) *Requests for certification; samples.* In addition to the requirements of § 146.2 of this chapter, each such request shall contain:

(i) Results of tests and assays on:

(*a*) The candicidin used in making the batch for potency, loss on drying, pH, and identity.

(*b*) The batch for potency, loss on drying, and disintegration time.

(ii) *Samples required.* (*a*) The candicidin used in making the batch: 10 packages, each consisting of approximately 300 milligrams.

(*b*) The batch: A minimum of 56 tablets.

(b) *Tests and methods of assay*—(1) *Potency.* Proceed as directed in § 141.111 of this chapter, preparing the sample for assay as follows: Weigh a pool of five tablets and grind in a mortar to a very fine powder. Suspend an accurately weighed aliquot (of approximately 2 grams) in 10 milliliters of dimethylsulfoxide. Centrifuge for 5 minutes at 20,000 revolutions per minute. Carefully decant the supernatant solution into a sterile 250-milliliter volumetric flask. Wash the residue three times with 5-milliliter portions of dimethylsulfoxide, centrifuging each time. Add the washes to the 250-milliliter volumetric flask and fill to volume with sterile distilled water. Using sterile distilled water, further dilute to the reference concentration of 0.06 microgram of candicidin per milliliter (estimated).

(2) *Disintegration time.* Proceed as directed in § 141.540 of this chapter, using the method described in paragraph (e)(1) of that section, except use distilled water as the immersion fluid.

(3) *Loss on drying.* Proceed as directed in § 141.501(b) of this chapter.

§ 148v.3 Candicidin vaginal ointment.

(a) *Requirements for certification*—(1) *Standards of identity, strength, quality, and purity.* Candicidin vaginal ointment is composed of candicidin and a suitable ointment base. It contains 0.6 milligram of candicidin per gram. Its potency is satisfactory if it is not less than 90 percent and not more than 140 percent of the number of milligrams of candicidin that it is represented to contain. Its moisture content is not more than 0.1 percent. The candicidin used conforms to the requirements of § 148v.1(a)(1).

(2) *Labeling.* It shall be labeled in accordance with the requirements of § 148.3 of this chapter.

(3) *Requests for certification; samples.* In addition to the requirements of § 146.2 of this chapter, each such request shall contain:

(i) Results of tests and assays on:

(*a*) The candicidin used in making the batch for potency, loss on drying, pH, and identity.

(*b*) The batch for potency and moisture.

(ii) Samples required:

(*a*) The candicidin used in making the batch: 10 packages, each containing approximately 300 milligrams.

(*b*) The batch: A minimum of five immediate containers.

(b) *Tests and methods of assay*—(1) *Potency.* Proceed as directed in § 141.111 of this chapter, preparing the sample for assay as follows: Accurately weigh approximately 3 grams of the ointment into a 50-milliliter centrifuge tube. Dissolve the ointment in 30 milliliters of *n*-hexane by warming the centrifuge tube with hot

water. Centrifuge for 15 minutes at 20,000 revolutions per minute. Carefully decant the supernatant, leaving all sediment in the tube. Repeat the suspending and centrifuging operation three times or until all the ointment base is washed out. After the final wash, evaporate the *n*-hexane by air evaporation. Dissolve the sediment in 10 milliliters of dimethylsulfoxide, quantitatively transfer to a sterile 200-milliliter volumetric flask, and fill to volume with sterile distilled water. Further dilute with sterile distilled water to the reference concentration of 0.06 microgram of candicidin per milliliter (estimated).

(2) *Moisture.* Proceed as directed in § 141.502 of this chapter.

§ 148v.4 Candicidin vaginal capsules.

(a) *Requirements for certification—*(1) *Standards of identity, strength, quality, and purity.* Candicidin vaginal capsules are gelatin capsules containing 3 milligrams of candicidin in a suitable and harmless ointment. The candicidin content is satisfactory if it is not less than 90 percent and not more than 140 percent of the number of milligrams of candicidin that it is represented to contain. The moisture content is not more than 0.1 percent. The candicidin used conforms to the requirements of § 148v.1(a)(1).

(2) *Labeling.* It shall be labeled in accordance with the requirements of § 148.3 of this chapter.

(3) *Requests for certification; samples.* In addition to complying with the requirements of § 146.2 of this chapter, each such request shall contain:

(i) Results of tests and assays on:

(*a*) The candicidin used in making the batch for potency, moisture, pH, and identity.

(*b*) The batch for potency and moisture.

(ii) Samples required:

(*a*) The candicidin used in making the batch: 10 packages, each containing approximately 300 milligrams.

(*b*) The batch: A minimum of 20 capsules.

(b) *Tests and methods of assay—*(1) *Potency.* Proceed as directed in § 141.111 of this chapter, except prepare the sample as follows: Remove tips from two capsules and express the ointment from each capsule into one 50-milliliter glass-stoppered centrifuge tube. Wash out the capsules with warm *n*-hexane adding the washes to the 50-milliliter centrifuge tube. Completely dissolve the ointment base in the *n*-hexane by warming the centrifuge tube with hot water, if necessary. Centrifuge for 15 minutes at 20,000 revolutions per minute. Carefully decant the supernatant leaving all sediment in the tube. Repeat the suspending and centrifuging operations three times or until all ointment base is washed out. After the final wash, evaporate the *n*-hexane by air evaporation. Dissolve the sediment in 20 milliliters of dimethylsulfoxide, quantitatively transfer to a sterile 250-milliliter volumetric flask, and fill to volume with sterile distilled water. Further dilute with sterile distilled water to the reference concentration of 0.06 microgram of candicidin per milliliter (estimated).

(2) *Moisture.* Proceed as directed in § 141.502 of this chapter.

B. Also regarding candicidin and also effective upon publication, minor technical changes are made in § 141.111(b) by revising in the table the item "Candicidin" to add two footnotes, as follows:

§ 141.111 Microbiological turbidimetric assay.

* * * * * * *

(b) * * *

Antibiotic	Test organism	Medium (nutrient broth)	Suggested volume of standardized inoculum to be added to each 100 milliliters of medium (nutrient broth)	Incubation temperature
Candicidin [1]	E	13	0.2	[2] 28
* * *	* * *	* * *	* * *	* * *

[1] Use sterile equipment for all stages of this assay.
[2] Cover and incubate the tubes for 16 to 18 hours.

* * * * * * *

(Sec. 507, 59 Stat. 463, as amended; 21 U.S.C. 357)

Dated: January 19, 1971.

H. E. SIMMONS,
Director, Bureau of Drugs.

[FR Doc.71-1318 Filed 2-1-71;8:45 am]

PART 149c—HETACILLIN

Hetacillin and Potassium Hetacillin

Pursuant to provisions of the Federal Food, Drug, and Cosmetic Act (sec. 507, 59 Stat. 463, as amended; 21 U.S.C. 357) and under authority delegated to the Commissioner of Food and Drugs (21 CFR 2.120), Part 149c is amended by adding the following new sections to provide for certification of the subject antibiotic drugs:

§ 149c.1a Sterile potassium hetacillin.

(a) *Requirements for certification—*(1) *Standards of identity, strength, quality, and purity.* Potassium hetacillin is the potassium salt of hetacillin. It occurs as a fine, white to light buff powder. It is so purified and dried that:

(i) Its potency is not less than 735 micrograms of ampicillin per milligram. If it is packaged for dispensing, its potency is satisfactory if it contains not less than 90 percent and not more than 120 percent of the number of milligrams of ampicillin that is represented to contain.

(ii) It is sterile.

(iii) It is nonpyrogenic.

(iv) It passes the safety test.

(v) Its moisture content is not more than 1.0 percent.

(vi) Its pH in an aqueous solution containing 10 milligrams per milliliter (or when reconstituted as directed in the labeling, if it is packaged for dispensing) is not less than 7.0 and not more than 9.0.

(vii) Its potassium hetacillin content is not less than 90 percent and not more than 105 percent.

(viii) It gives a positive identity test for potassium hetacillin.

(ix) It is crystalline.

(2) *Labeling.* It shall be labeled in accordance with the requirements of § 148.3 of this chapter.

(3) *Requests for certification; samples.* In addition to complying with the requirements of § 146.2 of this chapter, each such request shall contain:

(i) Results of tests and assays on the batch for potency, sterility, pyrogens, safety, moisture, pH, potassium hetacillin content, identity, and crystallinity.

(ii) Samples required:

(*a*) If the batch is packaged for repacking or for use in the manufacture of another drug:

(*1*) For all tests except sterility: 10 packages, each containing approximately 300 milligrams.

(*2*) For sterility testing: 20 packages, each containing approximately 300 milligrams.

(*b*) If the batch is packaged for dispensing:

(*1*) For all tests except sterility: A minimum of 10 immediate containers, except if each contains less than 450 milligrams, a minimum of 16 immediate containers.

(*2*) For sterility testing: 20 immediate containers, collected at regular intervals throughout each filling operation.

(b) *Tests and methods of assay—*(1) *Potency.* Proceed as directed for ampicillin in § 141.110 of this chapter, using the ampicillin working standard as the standard of comparison and preparing the sample for assay as follows: Dissolve an accurately weighed sample in sufficient 0.1*M* potassium phosphate buffer, pH 8.0 (solution 3), to give a stock solution of convenient concentration; and also if it is packaged for dispensing, reconstitute as directed in the labeling. Then, using a suitable hypodermic needle and syringe, remove the withdrawable contents from each container represented as a single-dose container; or if the labeling specifies the amount of potency in a given volume of the resultant preparation, withdraw an accurately measured representative portion from each container. Dilute the

sample thus obtained with sufficient solution 3 to give a stock solution of convenient concentration. Further dilute the stock solution with solution 3 to the reference concentration of 0.1 microgram of ampicillin per milliliter (estimated).

(2) *Sterility.* Proceed as directed in § 141.2 of this chapter, using the method described in paragraph (e)(1) of that section.

(3) *Pyrogens.* Proceed as directed in § 141.4(a) of this chapter using a solution containing the equivalent of 18 milligrams of ampicillin per milliliter.

(4) *Safety.* Proceed as directed in § 141.5 of this chapter.

(5) *Moisture.* Proceed as directed in § 141.502 of this chapter.

(6) *pH.* Proceed as directed in § 141.503 of this chapter, using an aqueous solution containing 10 milligrams per milliliter (or using a solution reconstituted as directed in the labeling, if it is packaged for dispensing).

(7) *Potassium hetacillin content.* Proceed as directed in § 149c.1(b)(5) of this chapter, except use about 110 milligrams of sample and calculate the potassium hetacillin content as follows:

$$\text{Percent potassium hetacillin} = \frac{c \times 500 \times 427.57}{\text{Wt. of sample in milligrams} \times 389.48}$$

where:

c = Concentration in micrograms per milligram of the sample solution obtained from the standard response line.

(8) *Identity.* Proceed as directed in § 141.521 of this chapter, using a 1 percent potassium bromide disc prepared as directed in paragraph (b)(1) of that section.

(9) *Crystallinity.* Proceed as directed in § 141.504(a) of this chapter.

§ 149c.2 Potassium hetacillin for injection.

(a) *Requirements for certification—*(1) *Standards of identity, strength, quality, and purity.* Potassium hetacillin for injection is a dry mixture of potassium hetacillin and lidocaine hydrochloride. Its potency is satisfactory if it contains not less than 90 percent and not more than 120 percent of the number of milligrams of ampicillin that it is represented to contain. It is sterile, nonpyrogenic, and passes the safety test. Its moisture content is not more than 1.0 percent. When reconstituted as directed in its labeling, its pH is not less than 7.0 and not more than 9.0. The potassium hetacillin used conforms to the requirements of § 149c.1a(a)(1).

(2) *Labeling.* It shall be labeled in accordance with the requirements of § 148.3 of this chapter.

(3) *Requests for certification; samples.* In addition to complying with the requirements of § 146.2 of this chapter, each such request shall contain:

(i) Results of tests and assays on:

(*a*) The potassium hetacillin used in making the batch for potency, moisture, pH, potassium hetacillin content, identity, and crystallinity.

(*b*) The batch for potency, sterility, pyrogens, safety, moisture and pH.

(ii) Samples required:

(*a*) The potassium hetacillin used in making the batch: 10 packages, each containing approximately 300 milligrams.

(*b*) The batch:

(*1*) For all tests except sterility: A minimum of 10 immediate containers, except if each contains less than 450 milligrams of ampicillin, a minimum of 16 immediate containers.

(2) For sterility testing: 20 immediate containers collected at regular intervals throughout each filling operation.

(b) *Tests and methods of assay—*(1) *Potency.* Proceed as directed for ampicillin in § 141.110 of this chapter, using the ampicillin working standard as the standard of comparison and preparing the sample for assay as follows: Reconstitute as directed in the labeling. Using a suitable hypodermic needle and syringe, remove the withdrawable contents from each container represented as a single-dose container; or if the labeling specifies the amount of potency in a given volume of the resultant preparation, withdraw an accurately measured representative portion from each container. Dilute the sample thus obtained with sufficient 0.1*M* potassium phosphate buffer, pH 8.0 (solution 3), to give a stock solution of convenient concentration. Further dilute the stock solution with solution 3 to the reference concentration of 0.1 microgram of ampicillin per milliliter (estimated).

(2) *Sterility.* Proceed as directed in § 141.2 of this chapter, using the method described in paragraph (e)(1) of that section.

(3) *Pyrogens.* Proceed as directed in § 141.4(a) of this chapter, using a solution containing the equivalent of 18 milligrams of ampicillin per milliliter.

(4) *Safety.* Proceed as directed in § 141.5 of this chapter for potassium hetacillin, except use a concentration of 4 milligrams of ampicillin activity per milliliter.

(5) *Moisture.* Proceed as directed in § 141.502 of this chapter.

(6) *pH.* Proceed as directed in § 141.503 of this chapter, using the product reconstituted as directed in the labeling.

§ 149c.3 Potassium hetacillin capsules.

(a) *Requirements for certification—*(1) *Standards of identity, strength, quality, and purity.* Potassium hetacillin capsules are composed of potassium hetacillin with or without one or more suitable diluents, lubricants, and drying agents. Each capsule contains an amount of potassium hetacillin equivalent to 112.5, 225, or 450 milligrams of ampicillin. Its potency is satisfactory if it contains not less than 90 percent and not more than 120 percent of the number of milligrams of ampicillin that it is represented to contain. The moisture content is not more than 3 percent. The potassium hetacillin used conforms to the requirements of § 149c.1b(a)(1).

(2) *Labeling.* It shall be labeled in accordance with the requirements of § 148.3 of this chapter.

(3) *Requests for certification; samples.* In addition to complying with the requirements of § 146.2 of this chapter, each such request shall contain:

(i) Results of tests and assays on:

(*a*) The potassium hetacillin used in making the batch for potency, safety, moisture, pH, potassium hetacillin content, identity, and crystallinity.

(*b*) The batch for potency and moisture.

(ii) Samples required:

(*a*) The potassium hetacillin used in making the batch: 10 packages, each containing approximately 300 milligrams.

(*b*) The batch: A minimum of 30 capsules.

(b) *Tests and methods of assay—*(1) *Potency.* Proceed as directed for ampicillin in § 141.110 of this chapter, using the ampicillin working standard as the standard of comparison and preparing the sample for assay as follows: Place a representative number of capsules in a high-speed gless blender with sufficient 0.1*M* potassium phosphate buffer, pH 8.0 (solution 3), to give a stock solution of convenient concentration. Blend for 3 to 5 minutes. Further dilute an aliquot of the stock solution with solution 3 to the reference concentration of 0.1 microgram of ampicillin per milliliter (estimated).

(2) *Moisture.* Proceed as directed in § 141.502 of this chapter.

§ 149c.4 Hetacillin chewable tablets.

(a) *Requirements for certification—*(1) *Standards of identity, strength, quality, and purity.* Each hetacillin chewable tablet contains an amount of hetacillin equivalent to 112.5 milligrams of ampicillin with suitable buffers, preservatives, binders, flavorings, colorings, and sweetening ingredients. Its potency is satisfactory if it contains not less than 90 percent and not more than 120 percent of the number of milligrams of ampicillin that it is represented to contain. The moisture content is not more than 2.0 percent. The hetacillin used conforms to the requirements of § 149c.1(a)(1).

(2) *Labeling.* It shall be labeled in accordance with the requirements of § 148.3 of this chapter.

(3) *Requests for certification; samples.* In addition to complying with the requirements of § 146.2 of this chapter, each such request shall contain:

(i) Results of tests and assays on:

(*a*) The hetacillin used in making the batch for potency, safety, moisture, pH, hetacillion content, identity, and crystallinity.

(*b*) The batch for potency and moisture.

(ii) Samples required.

(*a*) The hetacillin used in making the batch: 10 packages, each containing approximately 300 milligrams.

(b) The batch: A minimum of 30 tablets.

(b) *Tests and methods of assay*—(1) *Potency.* Proceed as directed for ampicillin in § 141.110 of this chapter, using the ampicillin working standard as the standard of comparison and preparing the sample for assay as follows: Place a representative number of tablets in a high-speed glass blender with sufficient 0.1*M* potassium phosphate buffer, pH 8.0 (solution 3), to give a stock solution of convenient concentration. Blend for 3 to 5 minutes. Further dilute an aliquot of the stock solution with solution 3 to the reference concentration of 0.1 microgram of ampicillin permilliliter (estimated).

(2) *Moisture.* Proceed as directed in § 141.502 of this chapter.

§ 149c.5 Hetacillin for oral suspension.

(a) *Requirements for certification*—(1) *Standards of identity, strength, quality, and purity.* Hetacillin for oral suspension is a mixture of hetacillin with one or more suitable preservatives, suspending agents, sweetening ingredients, flavorings and colorings. When reconstituted as directed in the labeling, it contains the equivalent of 22.5, 45, or 112.5 milligrams of ampicillin per milliliter. Its potency is satisfactory if it contains not less than 90 percent and not more than 120 percent of the number of milligrams of ampicillin that it is represented to contain. Its moisture content is not more than 2.0 percent. The pH of the suspension, when reconstituted as directed in its labeling, is not less than 2.0 and not more than 5.0. The hetacillin used conforms to the requirements of § 149c.1(a)(1).

(2) *Labeling.* It shall be labeled in accordance with the requirements of § 148.3 of this chapter.

(3) *Requests for certification; samples.* In addition to complying with the requirements of § 146.2 of this chapter, each such request shall contain:

(i) Results of tests and assays on:

(*a*) The hetacillin used in making the batch for potency, safety, moisture, pH, hetacillin content, identity, and crystallinity.

(*b*) The batch for potency, moisture and pH.

(ii) Samples required:

(*a*) The hetacillin used in making the batch: 10 packages, each containing approximately 300 milligrams.

(*b*) The batch: A minimum of six immediate containers.

(b) *Tests and methods of assay*—(1) *Potency.* Proceed as directed for ampicillin in § 141.110 of this chapter, preparing the sample for assay as follows: Reconstitute the sample as directed in the labeling. Remove an accurately measured representative portion with a suitable syringe and hypodermic needle and place into a suitable volumetric flask. Dilute to volume with 0.1*M* potassium phosphate buffer, pH 8.0 (solution 3). Further dilute an aliquot with solution 3 to the reference concentration of 0.1 microgram of ampicillin per milliliter (estimated).

(2) *Moisture.* Proceed as directed in § 141.502 of this chapter.

(3) *pH.* Proceed as directed in § 141.503 of this chapter, using the sample after reconstituting as directed in the labeling.

Data supplied by the manufacturer concerning the subject antibiotic drugs have been evaluated. Since the conditions prerequisite to providing for certification of these drugs have been complied with and since it is in the public interest not to delay in so providing, notice and public procedure and delayed effective date are not prerequisites to this promulgation.

Effective date. This order shall be effective upon publication in the FEDERAL REGISTER (2-2-71).

(Sec. 597, 59 Stat. 463, as amended; 21 U.S.C. 357)

Dated: January 19, 1971.

H. E. SIMMONS,
Director, Bureau of Drugs.

[FR Doc.71-1317 Filed 2-1-71;8:45 am]

Title 43—PUBLIC LANDS: INTERIOR

Chapter II—Bureau of Land Management, Department of the Interior

APPENDIX—PUBLIC LAND ORDERS

[Public Land Order 4992]

[Nevada 047410]

NEVADA

Partial Revocation of Stock Driveway Withdrawal

By virtue of the authority contained in section 10 of the Act of December 29, 1916, 39 Stat. 865, as amended, 43 U.S.C. section 300 (1964), it is ordered as follows:

1. The departmental order of January 16, 1919, creating Stock Driveway Withdrawal No. 54 (Nevada No. 10), is hereby revoked so far as it affects the following described lands:

MOUNT DIABLO MERIDIAN

T. 5 N., R. 37 E. (unsurveyed),
Secs. 15, 16;
Sec. 17, NE¼, NE¼NW¼, S½NW¼, S½;
Sec. 18, SW¼SE¼, E½SE¼;
Sec. 19, NE¼, NE¼NW¼, S½NW¼, S½;
Secs. 20 to 28 inclusive.
T. 4 N., R. 38 E. (unsurveyed),
Secs. 4, 5, 6, 8, 9, 10, 13 to 17, inclusive, 21 to 24, inclusive,
Relocated in:
T. 4 N., R. 38½ E. (unsurveyed),
Secs. 16 to 21, inclusive.
T. 5 N., R. 38 E. (unsurveyed),
Secs. 19, 20, 21, 28 to 33, inclusive.
T. 4 N., R. 39 E.,
Secs. 13 to 24, inclusive.
T. 4 N., R. 40 E.,
Secs. 16 to 22, inclusive, 25 to 29, inclusive, 33, 34, 35 and 36.
T. 3 N., R. 41 E.,
Secs. 2 to 6, inclusive;
Sec. 7, lots 1, 2, 3, E½, E½W½;
Sec. 8;
Sec. 9, W½;
Secs. 11 to 14, inclusive;
Sec. 15, S½;
Sec. 16, NW¼NE¼, S½NE¼, NW¼, NE¼SW¼, N½SE¼;
Sec. 17, NE¼, NE¼NW¼;
Sec. 22, NE¼NE¼;
Sec. 23, NE¼, N½NW¼;
Sec. 24, N½, N½S½, SE¼SE¼;
Sec. 25, S½NE¼, NW¼, S½;
Sec. 36.
T. 4 N., R. 41 E.,
Secs. 29 to 32, inclusive.
T. 1 N., R. 42 E.,
Sec. 2, N½, SW¼ (excluding Mineral Survey Patent No. 819102);
Secs. 3, 10, 15, 22, 27, 28, 33.
T. 2 N., R. 42 E.,
Secs. 5 to 18, inclusive, 23, 24, 25, 35, and 36 (excluding Mineral Survey Patent Nos. 819102, 848684, 876079, 933262).
T. 3 N., R. 42 E.,
Secs. 18, 19, 30, 31.
T. 3 S., R. 37 E. (unsurveyed),
Secs. 21 to 29, inclusive, 32, 33, 34.
T. 4 S., R. 37 E. (unsurveyed),
Secs. 4, 5, 7, 8, 9, 16, 17, 18.
T. 3 S., R. 38 E.,
Secs. 19 to 24, inclusive, 29 and 30 (excluding Mineral Survey Patent No. 46421 in sec. 29).
T. 3 S., R. 39 E.,
Secs. 19 to 24, inclusive.
T. 3 S., R. 40 E.,
Secs. 19 to 24, inclusive.
T. 3 S., R. 41 E.,
Secs. 19 to 24, inclusive.
T. 1 S., R. 42 E.,
Secs. 4, 9, 16, 21, 28, and 33.
T. 2 S., R. 42 E.,
Secs. 4, 9, 16, 21, 28, and 33.
T. 3 S., R. 42 E.,
Secs. 4, 9, 16, 17, 19, 20, and 21.

The areas described aggregate approximately 112,330 acres of public land in Esmeralda County.

Generally the lands encompass a mile wide strip that crosses valley bottoms and several mountain ranges with elevations ranging from 4,200 to 7,500 feet. Soils range from poorly drained clay loams to rocky, sandy loams.

A portion of the lands in T. 2 N., R. 42 E.; T. 3 N., R. 42 E.; T. 4 N., R. 40 E.; T. 3 N., R. 41 E.; T. 3 S., R. 39 E., and T. 2 S., R. 42 E., is embraced in a withdrawal of 50 feet on each side of the centerline of a power transmission line for Power Project No. 2703.

2. At 10 a.m. on March 2, 1971, the unreserved public lands shall be open to the operation of the public land laws generally, subject to valid existing rights, the provisions of existing withdrawals, and the requirements of applicable law and procedures. All valid applications received at or prior to 10 a.m. on March 2, 1971, shall be considered as simultaneously filed at that time. Those received thereafter shall be considered in the order of filing.

The public lands have been and continue to be open to applications and offers under the mineral leasing laws, and to location under the U.S. mining laws.

Inquiries concerning the lands should be addressed to the Manager, Land Office, Bureau of Land Management, Reno, Nev.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 25, 1971.

[FR Doc.71-1320 Filed 2-1-71;8:45 am]

[Public Land Order 4993]

[Oregon 6400 (Wash.)]

WASHINGTON

Reservation for Constructed Forest Service Road

By virtue of the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952 (17 F.R. 4831), it is ordered as follows:

1. Subject to valid existing rights and to the provisions of existing withdrawals, the following described public domain land is hereby withdrawn from all forms of appropriation under the public land laws, including the mining laws (30 U.S.C., Ch. 2), but not from leasing under the mineral leasing laws, nor the disposal of materials under the Act of July 31, 1947, 61 Stat. 681, as amended, 30 U.S.C. Sections 601–604 (1964), and reserved for use of the Department of Agriculture for the granting of easements for road rights-of-way as authorized by section 2 of the Act of October 13, 1964, 78 Stat. 1089, 16 U.S.C. Sections 532, 533 (1964):

WILLAMETTE MERIDIAN

TOATS COULEE ROAD NO. 390

T. 39 N., R. 25 E.,
Sec. 28, SW¼SW¼;
Sec. 29, S½SE¼;
Sec. 33, NE¼NW¼.

A strip of land 66 feet in width, being 33 feet in width on both sides of the centerline of the Toats Coulee Road in and through the above described subdivisions, as shown on plats filed in the Land Office, Bureau of Land Management, Portland, Oreg.

The area described contains about 1.39 acres in Okanogan County.

2. The withdrawal made by this order shall not preclude entries, selections, sales, exchanges, or leases under public land laws of any legal subdivisions traversed by an cooperator road constructed on any lands withdrawn by this order, provided that any such entry, selection, sale, exchange, or lease shall be subject to this order and to any road right-of-way easement over the lands issued by the Department of Agriculture.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71–1356 Filed 2–1–71;8:49 am]

[Public Land Order 4995]

[Montana 16783]

MONTANA

Partial Revocation of National Forest Administrative Site Withdrawal

By virtue of the authority vested in the President and pursuant to Executive Order No. 1035 of May 26, 1952 (17 F.R. 4831), it is ordered as follows:

1. The Secretary's order dated November 27, 1908, withdrawing public domain lands for use by the United States Forest Service as an administrative site, is hereby revoked so far as it affects the following described land:

PRINCIPAL MERIDIAN

T. 2 N., R. 58 E.,
Sec. 32, SW¼SW¼.

The area described contains 40 acres in Carter County.

2. At 10 a.m. on March 3, 1971, the land shall be open to operation of the public land laws, including the U.S. mining laws, and to the filing of applications and offers under the mineral leasing laws. All valid applications received at or prior to 10 a.m. on March 3, 1971, shall be considered as simultaneously filed at that time. Those received thereafter shall be considered in the order of filing.

Inquiries concerning the land should be addressed to the Manager, Land Office, Bureau of Land Management, Billings, Mont.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71–1357 Filed 2–1–71;8:49 am]

[Public Land Order 4996]

[Arizona 035307]

ARIZONA

Withdrawal and Reservation of Lands for National Historic Site Buffer Zone

By virtue of the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952 (17 F.R. 4831), it is ordered as follows:

1. Subject to valid existing rights, the following described public lands, under the jurisdiction of the Secretary of the Interior, are hereby withdrawn from all forms of appropriation under the public land laws, including the mining laws (30 U.S.C., Ch. 2), and from leasing under the mineral leasing laws, and reserved as a buffer zone for the Fort Bowie National Historic Site:

GILA AND SALT RIVER MERIDIAN

T. 15 S., R. 28 E.,
Sec. 1, SW¼SW¼, NW¼SW¼, NE¼SE¼, N½NW¼SE¼, NE¼SE¼SE¼, W½SW¼SE¼, SE¼SW¼SE¼;
Sec. 2, N½N½SE¼, SW¼;
Sec. 3, N½S½SE¼, SE¼SE¼SE¼;
Sec. 10, S½N½NE¼;
Sec. 11, SW¼NW¼NW¼, SW¼NW¼, S½S½SE¼NW¼, S½S½SW¼NE¼, SW¼SE¼NE¼;
Sec. 12, N½N½NE¼.

The areas described above aggregate approximately 590 acres in Cochise County.

2. The Bureau of Land Management will administer the use of these lands in such a manner as will complement and supplement administration by the National Park Service of the adjacent Fort Bowie National Historic Site.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71–1358 Filed 2–1–71;8:49 am]

[Public Land Order 4997]

[Sacramento 079492]

CALIFORNIA

Withdrawal for National Forest Administrative Sites-Recreation Areas-Roadside Zones

By virtue of the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952 (17 F.R. 4831), it is ordered as follows:

1. Subject to valid existing rights, the following described national forest lands are hereby withdrawn from appropriation under the mining laws (30 U.S.C., Ch. 2), but not from leasing under the mineral leasing laws, in aid of programs of the Department of Agriculture:

MOUNT DIABLO MERIDIAN

LASSEN NATIONAL FOREST

Butte Meadows Campground

T. 26 N., R. 4 E.,
Sec. 30, S½S½SE¼NE¼.

TAHOE NATIONAL FOREST

Alaska Peak Administrative Site

T. 18 N., R. 9 E.,
Sec. 6, SE¼SE¼SW¼SE¼.

American Hill Administrative Site

T. 19 N., R. 11 E.,
Sec. 20, SW¼SW¼NE¼SW¼.

Woodcamp Administrative Site

T. 19 N., R. 13 E.,
Sec. 30, lots 3 and 4, and E½SW¼.

Castle Valley Recreation Area

T. 17 N., R. 14 E.,
Sec. 12, SE¼, SW¼NE¼, E½SW¼, E½NW¼SW¼, W½NW¼, SE¼NW¼, W½NE¼NW¼, and SE¼NE¼NW¼.

PLUMAS NATIONAL FOREST

Lee Summit Seed Production Area

T. 23 N., R. 11 E.,
Sec. 8, NE¼NE¼ and S½NE¼ (except portion withdrawn by PLO 2971 for roadside zone);
Sec. 9, W½NW¼ (except portion withdrawn by PLO 2971 for roadside zone).

SHASTA AND TRINITY NATIONAL FORESTS

Eagle Flat Campground and Picnic Area

T. 38 N., R. 7 W.,
Sec. 8, N½SE¼ and N½SE¼SE¼.

Eagle Creek Campground

Sec. 16, NE¼SE¼NE¼ and S½SE¼.

Roadside-Streamside Zone

Sec. 16, those portions of the NE¼NW¼ and NE¼ described as: That land lying between Eagle Creek and Eagle Creek Road together with a strip of land 200 feet wide along the southwesterly side of Eagle Creek, extending from the north boundary of sec. 16 southeasterly to the confluence of the Trinity River; and a strip of land 200 feet wide along the northeasterly side of the Eagle Creek Road in place, extending from the north boundary of sec. 16 southeasterly to the confluence of the Trinity River, containing approximately 50 acres more or less.

HUMBOLDT MERIDIAN

Forest Glen Recreation Area

T. 1 S., R. 7 E.,
Sec. 13, SE¼SE¼SE¼, N½SE¼SE¼, and S½NE¼SE¼.

T. 1 S., R. 8 E.,
Sec. 18, SW¼ of lot 4 and S½NW¼ of lot 4 less H.E. Survey 264;
Sec. 19, NW¼ of lot 1, E½ of lot 1, NE¼ NW¼ less H.E. Survey 264, and NW¼ NE¼.

MOUNT DIABLO MERIDIAN

KLAMATH NATIONAL FOREST

Kangaroo-Lilypad Lakes Recreation Area

T. 40 N., R. 7 W.,
Sec. 14, N½N½.

Beaver Mouth Campground

T. 46 N., R. 8 W.,
Sec. 6, lot 1.

Trail Creek Recreation Area

T. 39 N., R. 10 W.,
Sec. 23, N½N½SE¼ and S½S½NE¼;
Sec. 24, SW¼SW¼NW¼.

Seiad Administrative Site

T. 46 N., R. 12 W.,
Sec. 12, portion of tract 55; beginning at point 5 of tract 55, thence N. 89°55′ W., 546.10 feet; thence S. 02°00′30″ E., 620.31 feet; thence S. 89°55′ E., 546.10 feet; thence N. 02°00′30″ W., 620.31 feet to point of beginning, containing 7.27 acres, more or less (which approximates NW¼ SW¼NW¼).

HUMBOLDT MERIDIAN

OAK BOTTOM GUARD STATION AND CAMPGROUND

T. 11 N., R. 6 E.,
Sec. 2, NE¼SE¼ less that part of I.A. Survey No. 280.

Ukonom Ranger Station-Administrative Site

T. 12 N., R. 6 E.,
Sec. 33, S½SE¼NE¼, NE¼SE¼, and SE¼ SE¼;
Sec. 34, NW¼NW¼NW¼, S½SW¼NW¼, NW¼SW¼, and SW¼SW¼.

Ti Bar Administrative Site

T. 13 N., R. 6 E.,
Sec. 8, SW¼NE¼SW¼ and NW¼SE¼ SW¼.

Johnson's Bar Campground

T. 13 N., R. 6 E.,
Sec. 32, SE¼SE¼, SW¼SE¼NE¼SE¼, E½ SW¼NE¼SE¼, and SE¼NW¼NE¼ SE¼.

SIX RIVERS NATIONAL FOREST

Big Flat Administrative Site

T. 15 N., R. 2 E.,
Sec. 23, E½NW¼NE¼ and W½NE¼NE¼.

Dry Lake Campground

T. 16 N., R. 3 E.,
Sec. 31, S½NW¼NE¼ and N½SW¼NE¼.

Fish Lake Campground

T. 10 N., R. 4 E.,
Sec. 14, NE¼NE¼.

Boise Creek Campground

T. 7 N., R. 5 E.,
Sec. 30, E½SE¼SW¼ and W½SW¼SE¼.

Big Bar Campground

T. 10 N., R. 5 E.,
Sec. 17, SW¼SE¼, SE¼SW¼ (lot 1 and portion lot 39), S½SW¼SW¼ (portion lots 2 and 39);
Sec. 20, N½N½NW¼ (portion lots 1, 2, and 39).

Gephart Campground

Sec. 19, S½ lot 4 and lot 5.

Aikens Campground

Sec. 30, lot 7, NE¼SW¼, E½NW¼SW¼, and E½W½NW¼SW¼.

Bluff Creek Campground

Sec. 30, W½ lot 1, W½ lot 5, lot 6, and E½ SW¼SW¼NW¼.

Bonda Mine Campground

T. 11 N., R. 6 E.,
Sec. 29, W½E½W½NE¼NW¼, W½W½ NE¼NW¼, N½SW¼NW¼, and NW¼ NW¼.

Pearch Creek Campground

T. 11 N., R. 6 E.,
Sec. 32, SE¼NE¼NW¼, S½NE¼NE¼ NW¼, and NW¼NE¼NE¼NW¼.

South Fork Campground

T. 15 N., R. 2 E.,
Sec. 15, NW¼NW¼NE¼, E½W½NE¼, E½ NW¼SE¼, and W½NE¼SE¼.

Madrona Campground

T. 17 N., R. 2 E.,
Sec. 24, E½NE¼NE¼.
T. 17 N., R. 3 E.,
Sec. 19, S½ lot 5 and N½ lot 6.

Patricks Creek Campground

T. 17 N., R. 3 E.,
Sec. 16, SW¼NE¼NW¼, S½NW¼NW¼, N½SW¼NW¼, and NW¼SE¼NW¼.

Mad River Campground

T. 1 S., R. 6 E.,
Sec. 2, E½NE¼SW¼, E½W½NE¼SW¼, and W½SW¼NE¼SW¼.

Bailey Canyon and Fir Cove Campgrounds

T. 1 S., R. 7 E.,
Sec. 29, SE¼SE¼;
Sec. 33, N½NW¼NW¼ and SW¼NW¼ NW¼.

The areas described aggregate approximately 2,646 acres in Butte, Del Norte, Humboldt, Nevada, Plumas, Sierra, Siskiyou, Tehama, and Trinity Counties.

2. The withdrawal made by this order does not alter the applicability of those public land laws governing the use of the national forest lands under lease, license, or permit or governing the disposal of their mineral or vegetative resources other than under the mining laws.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71-1359 Filed 2-1-71;8:49 am]

[Public Land Order 4998]

[Oregon 4372]

OREGON

Withdrawal for National Forest Recreation Areas

By virtue of the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952 (17 F.R. 4831), it is ordered as follows:

1. Subject to valid existing rights, the following described national forest lands are hereby withdrawn from appropriation under the mining laws (30 U.S.C., Ch. 2), but not from leasing under the mineral leasing laws, in aid of programs of the Department of Agriculture:

MOUNT HOOD NATIONAL FOREST

WILLAMETTE MERIDIAN

Lazy Bend Campground Addition

T. 4 S., R. 5 E.,
Sec. 28, S½N½NW¼SW¼, SE¼NW¼ SW¼, NE¼SW¼SW¼, W½NW¼SW¼ SW¼, N½S½SW¼SW¼.

Memaloose Campground

T. 4 S., R. 5 E.,
Sec. 29, SW¼SE¼SW¼NE¼.

Carter Bridge Campground Addition

T. 5 S., R. 5 E.,
Sec. 2, NW¼SE¼NE¼.

Armstrong Campground Addition

T. 5 S., R. 5 E.,
Sec. 2, SE¼SE¼NE¼, NE¼NE¼SE¼, N½ SE¼NE¼SE¼.

Ward Campground

T. 5 S., R. 5 E.,
Sec. 26, W½SW¼NE¼SW¼, E½SE¼SW¼ SW¼, W½SE¼SW¼.

Skookum Lake Campground

T. 6 S., R. 5 E.,
Sec. 35, W½SW¼ of lot 3.

Shining Lake Campground

T. 4 S., R. 6 E.,
Sec. 36, NE¼NE¼NE¼SW¼.

Frazier Forks Campground

T. 5 S., R. 7 E.,
Sec. 9, SE¼SW¼SW¼NW¼, NE¼NW¼ NW¼SW¼.

Frazier Turnaround Campground

T. 5 S., R. 7 E.,
Sec. 9, SW¼NW¼NW¼SW¼, NW¼SW¼ NW¼SW¼.

The areas described aggregate approximately 125.34 acres in Clackamas County.

2. The withdrawal made by this order does not alter the applicability of those public land laws governing the use of the national forest lands under lease, license, or permit, or governing the disposal of their mineral or vegetative resources other than under the mining laws.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71-1360 Filed 2-1-71;8:49 am]

[Public Land Order 4999]

[Oregon 4158]

OREGON

Partial Revocation of National Forest Administrative Site Withdrawals

By virtue of the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952 (17 F.R. 4831), it is ordered as follows:

1. The departmental orders of November 25, 1907, and October 30, 1908, so far as they withdrew the following described lands as an administrative site, are hereby revoked:

UMATILLA NATIONAL FOREST

WILLAMETTE MERIDIAN

Desolation Ranger Station Administrative Site

T. 9 S., R. 34 E.,
Sec. 5, lots 2 (NW¼NE¼), S½ lot 3 (S½ NE¼NW¼), N½SW¼NE¼, N½SE¼ NW¼.

The areas described aggregate 101.25 acres in Grant County.

2. At 10 a.m. on March 3, 1971, the lands shall be open to such forms of disposition as may by law be made of national forest lands.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71-1361 Filed 2-1-71;8:49 am]

[Public Land Order 5000]

[Arizona 4582]

ARIZONA

Modification of Stock Driveway Withdrawal To Permit Grant of Right-of-Way

By virtue of the authority contained in section 10 of the Act of December 29, 1916, 39 Stat. 865, as amended, 43 U.S.C. section 300 (1964), it is ordered, as follows:

The Departmental Order of June 6, 1923, creating Stock Driveway No. 164, Arizona No. 6, as enlarged by Departmental Orders of July 29, 1924, and May 19, 1938, is hereby modified to the extent necessary to permit the location of a right-of-way under section 2477, U.S. Revised Statutes, 43 U.S.C. section 932, by the Maricopa County Highway Department, over the following described lands, as delineated on a map entitled Projects Nos. 22-024 and 22-092, on file with the Bureau of Land Management in Arizona 4582, for construction of a public road:

GILA AND SALT RIVER MERIDIAN

T. 1 N., R. 7 E.,
Sec. 3, SE¼, NE¼SW¼, SW¼NW¼, W½SW¼;
Sec. 4, E½E½SE¼;
Sec. 9, NE¼.

The areas described aggregate 500 acres in Maricopa County.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[F.R. Doc.71-1362 Filed 2-1-71;8:49 am]

[Public Land Order 5001]

[Anchorage 051594]

ALASKA

Transfer of Lands From Department of the Navy to Department of the Air Force Public Land Order No. 1404 Amended in Part

By virtue of the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952 (17 F.R. 4831), it is ordered as follows:

Subject to valid existing rights, the following described lands, which were withdrawn for use by the War Department by Executive Order No. 8877 of August 29, 1941, as amended by Executive Order No. 9526 of February 28, 1945, the jurisdiction of which was transferred to the Department of the Navy by Public Land Order No. 1404 of April 3, 1957, are hereby transferred to the jurisdiction of the Department of the Air Force:

KODIAK ISLAND, ALASKA

CAPE GREVILLE—CAPE CHINIAK AREA

Beginning at a point on line of mean high tide on the east shore of Kodiak Island in latitude 57°34'08" N., longitude 152°11'-54" W., thence north 8,000 feet; west 7,000 feet approximately to longitude 152°13' W., north 7,800 feet approximately on longitude 152°13' W. to a point on line of mean high tide on Kalsin Bay; easterly and southerly along line of mean high tide around Cape Chiniak and Cape Greville to point of beginning.

The area described contains approximately 3,723 acres.

This order does not otherwise serve to change the provisions of Executive Order No. 8877, as amended by Executive Order No. 9526 and Public Land Order No. 1404, withdrawing and reserving the lands for military purposes.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71-1364 Filed 2-1-71;8:50 am]

[Public Land Order 5002]

[Oregon 5137]

OREGON

Partial Revocation of Reclamation Withdrawals Public Land Order No. 4777 of March 9, 1970, Revoked

By virtue of the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952 (17 F.R. 4831), and by the authority contained in section 3 of the Act of June 17, 1902, 32 Stat. 388, as amended and supplemented, 43 U.S.C. section 416 (1964), it is ordered as follows:

1. The orders of the Secretary dated March 17, 1904, August 16, 1905, and August 16, 1906, withdrawing lands for the Umatilla Project, are hereby revoked so far as they affect the following described lands:

WILLAMETTE MERIDIAN

T. 4 N., R. 28 E.,
Sec. 4, S½NE¼NE¼, N½NE¼NE¼.
T. 5 N., R 28 E.,
Sec. 26, S½S½NW¼NE¼, N½SW¼NE¼.

The areas described aggregate approximately 74.76 acres in Umatilla County.

The lands in sec. 4, T. 4 N., R. 28 E., are embraced in an allowed desert land entry.

2. At 10 a.m. on March 3, 1971, the lands in sec. 26, T. 5 N., R. 28 E., shall be open to operation of the public land laws, including the U.S. mining laws, subject to valid existing rights, the provisions of existing withdrawals, and the requirements of applicable law. All valid applications received at or prior to 10 a.m. on March 3, 1971, shall be considered as simultaneously filed at that time. Those received thereafter shall be considered in the order of filing. The lands have been and continue to be open to applications and offers under the mineral leasing laws.

3. Public Land Order No. 4777 of March 9, 1970, appearing in 35 F.R. 4516 of the issue of March 13, 1970, is hereby revoked in its entirety.

Inquiries concerning the lands should be addressed to the Chief, Division of Lands and Minerals Program Management and Land Office, Bureau of Land Management, Portland, Oreg.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71-1363 Filed 2-1-71;8:49 am]

[Public Land Order 5006]

[Idaho 3453]

IDAHO

Revocation of Administrative Site

By virtue of the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952 (17 F.R. 4831), it is ordered as follows:

1. Executive Order No. 1641 of November 8, 1912, withdrawing the following described lands as the Deer Lick Administrative Site, for use of the Forest Service, is hereby revoked:

BOISE MERIDIAN

T. 15 N., R. 4 E.,
Sec. 3, NW¼SW¼.

The area described contains 40 acres in Valley County.

The lands are located 8 miles east of Donnelly, in Little Valley. Topography is of moderately west-facing slope with elevations ranging from 5,100 to 4,960 feet. Soils are decomposed granite, not suitable for farming. Vegetation is lodgepole and ponderosa pine with a mixed grass understory.

2. At 10 a.m. on March 3, 1971, the land shall be opened to operation of the public land laws generally, subject to valid existing rights, the provisions of existing withdrawals, and the requirements of applicable law. All valid applications received at or prior to 10 a.m. on March 3, 1971, shall be considered as simultaneously filed at that time. Those received thereafter shall be considered in the order of filing.

3. The lands will be open to location for nonmetalliferous minerals under the U.S. mining laws at 10 a.m. on March 3, 1971. They have been and continue to be open to applications and offers under the mineral leasing laws, and to location and entry under the mining laws for metalliferous minerals.

Inquiries concerning the lands should be addressed to the Manager, Land Office, Bureau of Land Management, Boise, Idaho.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71-1365 Filed 2-1-71;8:50 am]

[Public Land Order 5007]

[Oregon 6983]

OREGON

Withdrawal for National Forest Research Natural Area

By virtue of the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952 (17 F.R. 4831), it is ordered as follows:

1. Subject to valid existing rights, the following described national forest land is hereby withdrawn from appropriation under the mining laws (30 U.S.C., Ch. 2), but not from leasing under the mineral leasing laws, in aid of programs of the Department of Agriculture:

WILLAMETTE MERIDIAN

OCHOCO NATIONAL FOREST

Ochoco Divide Research Natural Area

T. 12 S., R. 20 E.,
Sec. 28, S½;
Sec. 29, S½;
Sec. 30, SE¼;
Sec. 31, E½;
Sec. 32;
Sec. 33, W½W½.

The area described contains approximately 1,920 acres in Wheeler County.

2. The withdrawal made by this order does not alter the applicability of those public land laws governing the use of the national forest lands under lease, license, or permit, or governing the disposal of their mineral or vegetative resources other than under the mining laws.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71-1366 Filed 2-1-71;8:50 am]

[Public Land Order 5008]

[Idaho 3294]

IDAHO

Partial Revocation of Stock Driveway Withdrawal

By the virtue of the authority contained in section 10 of the Act of December 29, 1916, 39 Stat. 865, as amended, 43 U.S.C. section 300 (1964), it is ordered as follows:

1. The departmental order of December 9, 1918, creating Stock Driveway No. 48 (Idaho No. 3), is hereby revoked so far as it affects the following described lands:

BOISE MERIDIAN

SAWTOOTH NATIONAL FOREST

T. 1 N., R. 11 E.,
Sec. 31, SW¼, S½SE¼;
Sec. 32, S½S½.

The area described aggregates 400 acres in Elmore County.

2. At 10 a.m. on March 3, 1971, the lands shall be open to such forms of disposition as may by law be made of national forest lands.

The lands are open to applications and offers under the mineral leasing laws, and to location under the U.S. mining laws.

Inquiries concerning the lands should be addressed to the Manager, Land Office, Bureau of Land Management, Boise, Idaho.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71-1367 Filed 2-1-71;8:50 am]

[Public Land Order 5011]

[Utah 11029]

UTAH

Withdrawal for Administrative Site Revocation of Air Navigation Site Withdrawals

By virtue of the authority contained in section 4 of the Act of May 24, 1928, 45 Stat. 729, 49 U.S.C. section 214 (1964), and the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952 (17 F.R. 4831), it is ordered as follows:

1. Subject to valid existing rights, the following described lands are hereby withdrawn from all forms of appropriation under the public land laws, including the mining laws (30 U.S.C., Ch. 2), but not from leasing under the mineral leasing laws, and reserved as an administrative site for use by the Department of Agriculture:

SALT LAKE MERIDIAN

T. 36 S., R. 3 W.,
Sec. 7, lots 1 and 2.

The areas described aggregate 68.66 acres in Garfield County.

2. The departmental order of July 17, 1945, which withdrew lot 1, above, as Air Navigation Site Withdrawal No. 226, and Public Land Order No. 1946 of August 17, 1959, which withdrew lot 2, above, as an administrative site for use of the Federal Aviation Agency, are hereby revoked.

3. The withdrawal made by paragraph 1 of this order does not alter the applicability of the public land laws governing the use of the lands under lease, license, or permit, or governing the disposal of their mineral or vegetative resources other than under the mining laws.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71-1368 Filed 2-1-71; 8:50 am]

[Public Land Order 5012]

[New Mexico 9246]

NEW MEXICO

Powersite Cancellation No. 289; Partial Revocation of Waterpower Designation No. 1

By virtue of the authority contained in section 24 of the Act of June 10, 1920, 41 Stat. 1075, as amended, 16 U.S.C. section 818 (1964), and pursuant to the determination of the Federal Power Commission in DA-78-New Mexico, it is ordered as follows:

1. The Departmental Order creating Waterpower Designation No. 1, New Mexico No. 1, approved August 7, 1916, is hereby revoked so far as it affects the following described land:

NEW MEXICO PRINCIPAL MERIDIAN

CARSON NATIONAL FOREST

T. 28 N., R. 15 E.,
Secs. 6 and 7, tracts 37 and 38.

The area described contains 16.27 acres in Taos County.

The State of New Mexico failed to exercise its preference right of application for highway rights-of-way and material sites afforded it by section 24 of the Federal Power Act, supra, when notified of the proposed restoration of the lands from the withdrawal.

2. At 10 a.m. on March 3, 1971, the land shall be open to such forms of disposition as may be made of national forest lands.

HARRISON LOESCH,
Assistant Secretary of the Interior.

JANUARY 26, 1971.

[FR Doc.71-1369 Filed 2-1-71;8:50 am]

Title 49—TRANSPORTATION

Chapter I—Hazardous Materials Regulations Board, Department of Transportation

[Docket No. HM-25; Amdt. 178-16]

PART 178—SHIPPING CONTAINER SPECIFICATIONS

Special Composite Package for Electrolyte (Acid) or Alkaline Corrosive Battery Fluid

The purpose of this amendment to the Hazardous Materials Regulations of the Department of Transportation is to authorize the use of multiwall polyethylene or other suitable plastic bags within specification 12B fiberboard boxes for shipment of electrolyte acid or alkaline corrosive battery fluid.

On November 21, 1969, amendment 178-8 was published (34 F.R. 18554). Subsequent to the amendment, it was brought to the Hazardous Materials Regulations Board's attention that a major style of bag used for several years under special permit authority was a multiwall bag, and not a 3-mil bag within another 3-mil bag as described in the amendment.

The rule change as stated therefore did not authorize, as was intended, the type bag with which shipping experience had been obtained under special permit provision. On August 22, 1970, the Board published another notice of proposed rule making, Docket No. HM-25; Notice 70-15 (35 F.R. 13465) which proposed to correct the deficiency.

Interested persons were invited to give their views on the proposal. Two comments were received objecting to the concept of bag-in-a-box packaging for electrolyte. No other comments were received.

The proposed change related to a variation from currently authorized bag-in-a-box packaging. The two comments made, however, did not address themselves to the rule change concerned, and therefore could not be considered as objections to the proposal, but the Board does take note that concern exists over the overall adequacy of the package.

Accordingly, 49 CFR Part 178 is amended as follows:

In § 178.205-37, paragraph (a) is amended to read as follows:

§ 178.205 Specification 12B; fiberboard boxes.

§ 178.205-37 Special box; authorized polyethylene or other suitable plastic bags for packaging of electrolyte (acid) or alkaline corrosive battery fluid only.

(a) Box must comply with this specification except as follows: Box must be one-piece construction of slotted style and may have die-cut areas of minimum size to provide access to an inside closure part. Box must contain one multiwall bag made of polyethylene or other suitable plastic of sufficient size and capacity to be capable of coming into contact with all of the interior surfaces of the box when filled. Each ply of the bag must be formed from virgin film not less than 0.003 inch thick. Joints must be heat sealed and not less than ⅛-inch wide.

* * * * *

This amendment is effective June 10, 1971. However, compliance with the regulations as amended herein is authorized immediately.

(Secs. 831-835, title 18, U.S.C.; sec. 9, Department of Transportation Act, 49 U.S.C. 1657; title VI and sec. 902(h), Federal Aviation Act of 1958, 48 U.S.C. 1421-1430, 1472(h))

Issued in Washington, D.C., on January 27, 1971.

CARL V. LYON,
Acting Administrator,
Federal Railroad Administration.

C. R. BENDER,
Admiral, U.S. Coast Guard,
Commandant.

ROBERT A. KAYE,
Director, Bureau of Motor Carrier Safety, Federal Highway Administration.

SAM SCHNEIDER,
Board Member, for the Federal Aviation Administration.

[FR Doc.71-1333 Filed 2-1-71;8:46 am]

Proposed Rule Making

DEPARTMENT OF AGRICULTURE

Consumer and Marketing Service

[7 CFR Ch. IX]

[Docket No. AO–372]

SPEARMINT OIL PRODUCED IN CERTAIN STATES

Notice of Hearing With Respect to Proposed Marketing Agreement and Order

Pursuant to the Agricultural Marketing Agreement Act of 1937, as amended (48 Stat. 31, as amended; 7 U.S.C. 601–674), and in accordance with the applicable rules of practice and procedure governing proceedings to formulate marketing agreements and marketing orders (7 CFR Part 900), notice is hereby given of a public hearing to be held in the Auditorium of the Federal Building, Richland, WA, beginning at 9:30 a.m., local time, February 24, 1971, with respect to a proposed marketing agreement and order regulating the handling of spearmint oil produced in the States of Washington, Idaho, and Oregon, and designated part of California, Nevada, Utah, and Montana.

The proposed marketing agreement and order have not received the approval of the Secretary of Agriculture.

The public hearing is for the purpose of receiving evidence with respect to the economic and marketing conditions which relate to the provisions of the proposed marketing agreement and order, hereinafter set forth, and to any appropriate modifications thereof.

The proposed marketing agreement and order, the provisions of which are as follows, was submitted, with a request for a public hearing thereon, by the Northwest Spearmint Marketing Association (the sections identified with asterisks (* * *) apply only to the proposed marketing agreement and not to the proposed orders):

DEFINITIONS

§ 1 Secretary.

"Secretary" means the Secretary of Agriculture of the United States, or any officer or employee of the Department to whom authority has heretofore been delegated, or to whom authority may hereafter be delegated, to act in his stead.

§ 2 Act.

"Act" means Public Act No. 10, 73d Congress (May 12, 1933), as amended, and renacted and amended by the Agricultural Marketing Agreement Act of 1937, as amended (Secs. 1–19, 49 Stat. 31, as amended; U.S.C. 601–674).

§ 3 Person.

"Person" means an individual, partnership, corporation, association, or any other business unit.

§ 4 Spearmint Oil.

"Spearmint Oil" or "oil" means the essential oil extracted from the plant of genus Mentha, species cardiaca (commonly referred to as Scotch) or spicata (commonly referred to as Native), or any other species grown in the production area.

§ 5 Classes of Spearmint Oil.

"Class 1" shall be the product of the distillation process of Scotch spearmint.

"Class 2" shall be the product of the distillation process of Native spearmint.

At the time of receiving spearmint oil for handling each handler shall have the oil divided into classes according to standards devleoped by the committee and approved by the Secretary. The committee may require a third party to determine the class of oil received by each handler. Each handler shall notify the committee of the locations of receiving stations.

§ 6 Salable Spearmint Oil.

"Salable spearmint oil" means oil which has been identified as having had the appropriate set-aside spearmint oil withheld and is free to be handled.

§ 7 Set-aside Spearmint Oil.

"Set-aside spearmint oil" means that spearmint oil which must be withheld in satisfaction of a set-aside obligation arising from application of the set-aside percentage established by the Secretary pursuant to § 45 hereof.

§ 8 Production Area.

"Production area" means all of the area North of the 37th Parallel, except Alaska and West of the 111th Meridian. The area shall be divided into the following districts:

(a) "District 1" shall include the area in the State of Washington west of the Okanogan River and west of the Columbia River below its confluence with the Okanogan River.

(b) "District 2" shall include the area in the State of Washington not included in District 1.

(c) "District 3" shall include the balance of the production area.

§ 9 Producer.

"Producer" is synonymous with "grower" and means an individual, partnership, corporation, association, or any other business unit that grows and harvests spearmint and produces spearmint oil or causes it to be produced therefrom.

§ 10 Handler.

"Handler" is synonymous with "shipper" and means any person who handles spearmint oil.

§ 11 Handle.

"Handle" means to sell spearmint oil, use oil commercially of own production, to acquire, transport or ship (except as a common or contract carrier of oil owned by another), store, or warehouse or place spearmint oil into the current of commerce within the production area or from the production area to any point outside thereof following distillation except that the preparation, sale or transportation of spearmint oil by a producer to a handler of record shall not be construed as handling.

§ 12 Marketing Year and Crop Year.

"Marketing year" and "crop year" are synonymous and mean the 12 months from July 1 to the following June 30, inclusive, or such other period as recommended by the committee and approved by the Secretary.

ADMINISTRATIVE BODIES

§ 20 Designation of Administrative Bodies.

A Spearmint Oil Administrative Committee and a Spearmint Oil Marketing Advisory Board are hereby established. The membership shall be selected in accordance with provisions of §§ 21 through 28, inclusive.

§ 21 Spearmint Oil Administrative Committee—Membership and Term of Office.

(a) The Spearmint Oil Administrative Committee (hereinafter referred to as "Committee") shall consist of seven members, each of whom shall have an alternate who shall have the same qualifications as the member for whom he is an alternate. Four (4) of the members and their respective alternates shall each be a producer, or a designated officer or employee thereof, in District 1; one (1) member and his respective alternate shall each be a producer, or a designated officer or employee thereof, in District 2; and two (2) members and their respective alternates shall each be a producer, or a designated officer or employee thereof, in District 3.

(b) The term of office of committee members and their respective alternates shall be for 2 years beginning April 1 and ending March 31: *Provided*, That the initial term of office shall begin on the effective date of the order and shall end March 31, 1973.

§ 22 Nominations for Spearmint Oil Administrative Committee Members.

(a) *Initial members.* Nominations for each of the initial members and alternate members may be submitted to the Secretary, not later than the effective date of this part, by individual producers, including officers or employees thereof, or groups of producers. Such nominations may be made by means of separate group meetings of the producers concerned in each district, which meetings shall be publicized and open to all producers. In the event nominations for initial members or alternate members of

the committee are not submitted pursuant to and within the time specified in this paragraph, the Secretary may select such initial members or alternate members without regard to nominations, but selections shall be on the basis of the representation provided for in § 21.

(b) *Successor members.* (1) The committee shall hold or cause to be held, not later than March 15 of each odd-numbered year, meetings of producers in each district for the purpose of designating nominees for successor members and alternate members of the committee whose term of office expires on March 31 of that year. Such meetings shall be publicized and open to all producers. At each such meeting, a chairman and a secretary shall be elected by the producers eligible to participate therein. The eligible person receiving the highest number of votes for a member or alternate member position shall be the nominee for the respective position. The chairman shall announce at each meeting the results of nominations for members and alternate members and shall submit promptly to the committee a complete report concerning such meeting. Should the committee find it impracticable to conduct nomination meetings, nominations may be submitted to the Secretary based on the results of balloting by mail. Whenever ballots are to be cast by mail, the committee shall give public notice and mail, to all producers of record, ballots containing the names of the candidates, blank spaces in which names of candidates may be written for each position, and instructions as to the voting procedure. The committee shall submit all nominations to the Secretary on or before March 15 of each year. In the event nominations for successor members or alternate members of the committee are not submitted pursuant to and within the time specified in this paragraph, the Secretary may select such successor members or alternate members without regard to nominations, but selections shall be on the basis of the representation provided for in § 21.

(2) Only producers, including duly authorized officers or employees thereof, who are present at nomination meetings may participate in the nomination and election of nominees for committee members and alternate members. Each producer shall be entitled to cast only one vote for each position to be filled. No producer or any agent thereof shall participate in the election of nominees in more than one district. In case a person produces spearmint oil in more than one district, he shall select one district in which he will cast nominating votes and notify the committee as to the district in which he will, until further notice, cast nominating votes.

§ 23 Selection of Spearmint Oil Administrative Committee Members.

(a) *Initial members.* From the persons nominated pursuant to § 21(a), or from other qualified persons the Secretary shall select the initial members and alternate members for the committee on the basis of the district representation provided for in § 22.

(b) *Successor members.* From the nominations made pursuant to § 22(b), or from other qualified persons, the Secretary shall appoint the successor members and alternate members on the basis of the district representation provided for in § 22.

§ 24 Spearmint Oil Marketing Advisory Board Membership and Term of Office.

The Spearmint Oil Marketing Advisory Board (hereinafter referred to as "board") shall consist of five members, each of whom shall have an alternate, all of whom shall be handlers or the officers or employees of handlers. The term of office of board members and their respective alternates shall be for 2 years beginning April 1 and ending March 31: *Provided*, That the term of office of the initial members and their alternates shall end March 31, 1973. Members and alternate members shall serve in such capacities for the term of office for which they are selected and have qualified and until their respective successors are selected and have qualified.

§ 25 Nominations for Spearmint Oil Marketing Advisory Board.

(a) *Initial members.* Nominations for each of the initial members and alternate members of the board may be submitted to the Secretary not later than the effective date of this part, by individual handlers. Such nominations may be made by means of separate group meetings of the handlers concerned in all districts, which meetings shall be publicized and open to all handlers. In the event nominations for initial members or alternate members of the board are not submitted pursuant to and within the time specified by this paragraph, the Secretary may select such initial members and alternate members without regard to nominations.

(b) *Successor members.* Nominations for successor members and alternate members of the board shall be made by the handlers involved and shall be submitted to the committee for certification and transmission to the Secretary not later than March 15 of each odd numbered year, together with information deemed to be pertinent or requested by the Secretary. In the event nominations for successor members or alternate members of the board are not submitted pursuant to and within the time specified in this paragraph, the Secretary may select such successor members or alternate members without regard to nominations.

§ 26 Selection of Spearmint Oil Marketing Advisory Board Members.

(a) *Initial members.* The Secretary shall select the initial members and alternate members for the board from the persons nominated pursuant to § 25(a), or from other qualified persons.

(b) *Successor members.* The Secretary shall select the successor members and alternate members for the board from persons nominated pursuant to § 25(b), or from other qualified persons.

§ 27 Acceptance.

Any person selected by the Secretary as a member or alternate member of the committee or the board shall qualify by filing a written acceptance with the Secretary promptly after being notified of such selection.

§ 28 Vacancies.

To fill any vacancy occasioned by the failure to qualify of any person selected as a member or as an alternate member of either administrative body or in the event of the death, removal, resignation, or disqualification of any member or alternate member of either administrative body, a successor for the unexpired term of such member or alternate shall be nominated and selected in the manner specified in §§ 22 and 23 or §§ 25 and 26, as applicable. If the names of nominees to fill any such vacancy are not made available to the Secretary within a reasonable time after such vacancy occurs, the Secretary may fill such vacancy without regard to nominations, except that selections to fill committee vacancies shall be made on the basis of representation provided for in § 21.

§ 29 Alternate Members.

An alternate member of the committee or the board, during the absence or at the written request of the member for whom he is an alternate, shall act in the place and stead of such member. In the event of the death, removal, resignation, or disqualification of any member, his alternate shall act for him until a successor for such member is selected and has qualified. In the event that both a member and his alternate are unable to attend a meeting the administrative body may designate any other alternate member from the same body and the same district, where applicable, to serve in such member's place and stead.

§ 30 Powers of the Spearmint Oil Administrative Committee.

The committee shall have the following powers:

(a) To administer this part in accordance with its terms and provisions;

(b) To make rules and regulations to effectuate the terms and provisions of this part;

(c) To receive, investigate, and report to the Secretary complaints of violations of this part; and

(d) To recommend to the Secretary amendments to this part.

§ 31 Duties of the Spearmint Oil Administrative Committee.

The committee shall have, among others, the following duties:

(a) To select from among its membership such officers and adopt such rules or bylaws for the conduct of its meetings as it deems necessary;

(b) To appoint such employees as it may deem necessary, and to determine the compensation and to define the duties of each employee;

(c) To appoint such subcommittees or other committees as it may deem necessary;

(d) To keep minutes, books, and records which will reflect all of the acts and transactions of the committee and which shall be subject to examination by the Secretary;

(e) To prepare periodic statements of the financial operations of the committee and to make copies of each such statement available to producers and handlers for examination at the office of the committee;

(f) To cause the books of the committee to be audited by a certified public accountant at least once each marketing year and at such other times as the committee may deem necessary, or as the Secretary may request, to submit two copies of each such audit report to the Secretary, and to make available a copy, which does not contain confidential data, for inspection by producers and handlers at the offices of the committee;

(g) To act as intermediary between the Secretary and any producer or handler;

(h) To investigate and assemble data on the growing, handling, and marketing conditions with respect to spearmint oil;

(i) To submit to the Secretary such available information as he may request or the committee may deem desirable and pertinent;

(j) To notify producers and handlers of all meetings of the committee to consider recommendations for regulations and of all regulatory actions taken affecting producers and handlers;

(k) To give the Secretary the same notice of meeting of the committee and its subcommittees or other committees as is given to its members;

(l) To investigate complaints and use available means to prevent violations of the provisions of this part;

(m) With the approval of the Secretary, to redefine the districts into which the production area is divided and to reapportion the representation of any district on the committee: *Provided,* That any such changes shall reflect, insofar as practicable, shifts in spearmint oil production within the districts and the production area; and

(n) To consult, cooperate, and exchange information with other marketing agreement committees and other individuals or agencies in connection with all proper committee activities and objectives under this part.

§ 32 Procedure of the Spearmint Oil Administrative Committee.

At any assembled meeting, six members of the committee shall constitute a quorum and all votes shall be cast in person. Decisions of the committee at assembled meetings shall require the concurring vote of at least five members. The committee may vote by mail, telephone, or other means of communication on matters other than the formulation of marketing policies and recommendation of regulations: *Provided,* That each proposition is explained accurately and fully to each member available and all such votes shall be confirmed in writing. A reasonable time limit may be set by the committee for receipt of written confirmation. Five concurring votes shall be required for approval of a committee action by such method of voting.

§ 33 Duties of the Spearmint Oil Marketing Advisory Board.

The duties of the board shall consist of selecting from its members such officers, establishing such bylaws as it deems necessary for performing its functions, making such recommendations with respect to marketing policies, and considering and recommending such other matters as it may deem advisable or the committee may request.

§ 34 Compensation and expenses.

Members and alternate members of the committee and of the board shall serve without compensation but shall be reimbursed for necessary expenses incurred in connection with their duties under this part.

§ 35 Annual report.

The committee shall, as soon as is practicable after the close of each marketing year, prepare and mail an annual report to the Secretary and make a copy available to each handler and producer who requests it. This annual report shall contain at least:

(a) A complete review of the regulatory operations during the marketing year;

(b) A review of the effect, upon the spearmint oil industry, of the regulatory operations; and

(c) Any recommendations for changes in the program.

§ 36 Funds and other property.

(a) All funds received by the committee, pursuant to the provisions of this part, shall be used solely for the purpose specified in this part; and the Secretary may require the committee and its members to account for all receipts and disbursements.

(b) Upon the resignation, removal, or expiration of the term of any member or employee of the committee, all books, records, funds, and other property in his possession belonging to the committee shall be delivered to the committee or to his successor in office; and such assignments and other instruments shall be executed as may be necessary to vest in in committee full title to all the books, records, funds, and other property in the possession or under the control of such member or employee, pursuant to the provisions of this part.

EXPENSES AND ASSESSMENTS

§ 40 Expenses.

The committee is authorized to incur such expenses as the Secretary finds are reasonable and likely to be incurred to carry out the functions of said committee and of the board under this part during each marketing year. The funds to cover such expenses shall be acquired by the levying of assessments as prescribed in § 41. The committee shall submit to the Secretary a budget for each marketing year, including an explanation of the items appearing therein, and a recommendation as to the rate of assessment for such year.

§ 41 Assessments.

(a) *Requirements for payment.* Each person who first handles spearmint oil shall pay to the committee upon demand, his pro rata share of the expenses authorized by the Secretary for each marketing year. Each such person's pro rata share shall be the rate of assessment per pound fixed by the Secretary times the salable quantity of spearmint oil which he handles as first handler thereof. The payment of assessments for the maintenance and functioning of the committee and the board may be required under this part throughout the period it is in effect irrespective of whether particular provisions thereof are suspended or become inoperative.

(b) *Rate of assessment.* The Secretary shall fix the rate of assessment to be paid by each first handler. At any time during or after the marketing year, the Secretary may increase the rate of assessment in order to secure sufficient funds to cover any later finding by the Secretary relative to the expenses which may be incurred. Such increase shall be applied to all spearmint oil handled during the applicable marketing year. In order to provide funds for the administration of the provisions of this part during the first part of a marketing year before sufficient operating income is available from assesments on the current year's shipments, the committee may accept the payment of assessments in advance, and may also borrow money for such purpose.

§ 42 Accounting.

(a) *Excess funds.* At the end of a marketing year, funds in excess of the year's expenses shall be placed in an operating reserve not to exceed approximately 1 marketing year's operational expenses or such lower limits as the committee, with the approval of the Secretary, may establish. Funds in such reserve shall be available for use by the committee for expenses authorized pursuant to § 40. Funds in excess of those placed in the operating reserve shall be refunded to handlers: *Provided,* That any sum paid by a first handler in excess of his pro rata share of the expenses during any marketing year may be applied by the committee at the end of such marketing year to any outstanding obligations due the committee from such person. Each handler's share of such excess funds shall be the amount of assessments he paid in excess of his pro rata share.

(b) *Disposition of funds upon termination of order.* Upon termination of this part, any funds not required to defray the necessary expenses of liquidation shall be disposed of in such manner

as the Secretary may determine to be appropriate; *Provided*, That to the extent practicable, such funds will be returned pro rata to the first handler from whom such funds were collected.

REGULATION

§ 43 Marketing policy.

(a) Each season prior to making any recommendation pursuant to § 44, the committee shall submit to the Secretary a report setting forth its marketing policy for the ensuing marketing season. Such marketing policy report shall contain information relating to:

(1) The estimated pounds of each class of salable oil in the hands of growers.

(2) The desirable carryout of each class of salable oil at the end of the crop year.

(3) The amount of each class of oil in the set-aside.

(4) The estimated carryover of each class of salable oil by handlers.

(5) The estimated demand for each class of oil.

(6) The estimated or known production in the current crop year.

(7) The current prices being received and the probable general level of the prices to be received for each class of oil.

(b) The committee shall, not later than July 1 of each year, announce its initial recommendation to the Secretary as to the salable percentage for each class of spearmint oil that should be made available for handling during the ensuing marketing year. It shall also recommend the set-aside percentage for each class of oil.

(c) In the event that it becomes necessary to substantially modify its marketing policy at any or all of its meetings held during the first week in October and February, and at such other meetings that may be held, the committee shall submit to the Secretary a revised marketing policy report setting forth the information prescribed in this section. Notice of the committee's marketing policy, and any modifications thereof, shall be made available promptly to producers, handlers and any other interested person who has filed his name and address with the committee for that purpose.

(d) All assembled meetings of the committee shall be open to growers and handlers and other interested persons. The committee shall give notice of all meetings as it deems appropriate.

§ 44 Recommendations for regulations.

(a) Whenever the considerations enumerated in § 43 indicate a need for limiting the quantity of spearmint oil marketed, the committee shall recommend to the Secretary a salable percentage and a set-aside percentage of the currently available oil. Prior to July 1 of each year, the committee shall formulate its marketing policy and, if conditions warrant, recommend to the Secretary an appropriate salable percentage and set-aside percentage for the ensuing crop, including any set-aside oil, as may be warranted.

(b) The failure of the board to make a recommendation with respect to regulation authorized by § 45, after having received notice of the intention of the committee to meet for the purpose of receiving such recommendations, shall not preclude the committee from submitting recommendations and supporting information to the Secretary.

(c) The committee shall give notice of any meeting to consider the recommendation of regulations pursuant to § 44 by mailing a notice of meeting to each handler who has filed his address with the committee for this purpose. The committee shall give the same notice of any such recommendation before the recommended time that such regulation would become effective.

§ 45 Issuance of regulations.

When the Secretary finds, but no later than July 1 of each year, on the basis of the committee's recommendations or other information, that the anticipated supply of spearmint oil by class produced by all producers is in excess of the market demand for that class, he shall establish a salable percentage and a set-aside percentage which shall be used to determine the amount of spearmint oil of each class that may be purchased from or handled on behalf of each producer by all handlers.

(a) Each producer's salable quantity for the initial marketing year shall be determined by multiplying his production of each class of oil in such year by the salable percentage. The remaining balance shall be his set-aside quantity of each class of oil. Handlers may acquire and freely handle the salable quantity of each producer: *Provided*, That they set aside from each delivery, in the name of the producer, the set-aside quantity.

(b) Each producer's salable quantity in subsequent years shall be determined by multiplying his production of each class of oil in that year plus his set-aside of that class from any prior years, by the salable percentage. The remaining balance shall be his set-aside quantity of that class. Handlers may acquire and freely handle the salable quantity, of each producer: *Provided*, That they set aside, from each delivery in the name of the producer, the set-aside quantity.

§ 46 Modification, suspension or termination of volume regulations.

During the first week in October and February, or such other dates as recommended by the committee and approved by the Secretary, the committee shall review its recommendations of the set-aside percentages for each class of spearmint oil. If it is determined that such percentage did not result in an adequate salable quantity of either class of oil, it shall recommend a reduction of the set-aside percentage so that any portion of the set-aside, as approved by the Secretary, may be made available for handling as salable quantity of each class.

§ 47 Set-aside.

(a) Whenever the Secretary has fixed the set-aside percentage for any marketing year as provided in § 45, each handler shall set aside in the name of each producer at such time and in such manner and form as the committee may prescribe, a portion of the spearmint oil he acquired during such period that will fulfill the set-aside requirements. Such set-aside portion shall be equal to the product obtained by multiplying the pounds of spearmint oil of each class acquired from each grower during the marketing year by the set-aside percentage as fixed by the committee with the approval of the Secretary.

(b) Set-aside spearmint oil shall be held by each handler for the account of the producer until relieved of such responsibility by the committee. Such set-aside spearmint oil shall be stored in accordance with good commercial practices and apart from other spearmint oil. The committee may, with the approval of the Secretary, establish rules and regulations with regard to such things as storage, transfer from one handler to another, and identification of set-aside spearmint oil.

(c) Handlers shall store set-aside in the containers in which received and maintain the same as when acquired except for normal and natural deterioration, loss through fire, acts of God or other conditions beyond the handler's control.

§ 48 Exempt spearmint oil.

Oil held in the hands of a producer or handler on the effective date of this order shall be free of regulations under this order if reported to and identified to the committee not later than 15 days after the effective date of the order. If not so reported and identified to the committee, it shall be presumed that such oil was produced after the effective date of this order.

TRADE PRACTICES

§ 55 Authorization for prohibition of trade practices.

Whenever the Secretary finds, upon recommendation of the committee or other information, that continuance of certain trade practices in trade channels would tend to interfere with achieving the objectives of this part, he may prohibit handlers from using such practices for any crop year or portion thereof. Prior to any such practices being prohibited in any crop year the committee shall recommend, for the approval of the Secretary, such rules and procedures and such recordkeeping requirements as are necessary to enforce prohibitions and obtain compliance therewith.

REPORTS AND RECORDS

§ 60 Reports.

(a) *Producer reports.* In order to assist the Secretary in establishing the salable percentage for any class of oil as required under § 45, each producer shall report to the committee on or before January 15 of each year, on forms provided by the committee, his estimated acreage by class for the ensuing crop year.

Any person who did not produce oil in the then current crop year should notify the committee by January 15 of said year

of his intended acreage for the ensuing crop year, the class of oil to be produced, and the location or locations of production.

(b) *Inventory.* Each handler shall file with the committee a certified report showing such information as the committee may specify with respect to any spearmint oil held by him on such dates as the committee may designate.

(c) *Receipts.* Each handler shall, upon request of the committee, file with the committee a certified report showing, for each lot of spearmint oil received, the identifying marks, type or variety, weight, place of production, and the producer's name and address.

(d) *Other reports.* Upon the request of the committee, as approved by the Secretary, each handler shall furnish to the committee such other information as may be necessary to enable it to exercise its powers and perform its duties under this part.

§ 61 Records.

Each handler shall maintain such records pertaining to all spearmint oil handled under the provisions of this part as will substantiate the required reports. All such records shall be maintained for at least 2 years after the termination of the marketing year to which the records relate.

§ 62 Verification of reports and records.

For the purpose of assuring compliance with record keeping requirements and veryfying reports filed by producers and handlers the Secretary and the committee, through its duly authorized employees, shall have access to any premises where applicable records are maintained, where spearmint oil is received or held, and, at any time during reasonable business hours, shall be permitted to inspect such handler premises and any/or all records of such handlers with respect to matters within the purview of this part.

§ 63 Confidential information.

All reports and records furnished or submitted by handlers to, or obtained by the employees of, the committee which contain data or information constituting a trade secret or disclosing the trade position, financial condition, or business operations of the particular handler from whom received, shall be treated as confidential and the reports and all information obtained from the records shall at all times be kept in the custody and under the control of one or more employees of the committee who shall disclose such information to no person other than the Secretary.

MISCELLANEOUS PROVISIONS

§ 70 Compliance.

No person shall handle spearmint oil except in conformity with the provisions of this part.

§ 71 Rights of the Secretary.

Members of the committee and of the board, and any agent, employees, or representatives thereof, shall be subject to removal or suspension by the Secretary at any time. Each and every decision, determination, and other act of the committee shall be subject to the continuing right of disapproval by the Secretary at any time. Upon such disapproval, the disapproved action of the committee shall be deemed null and void, except as to acts done in reliance thereon or in accordance therewith prior to such disapproval by the Secretary.

§ 72 Derogation.

Nothing contained in this part is, or shall be construed to be, in derogation or in modification of the rights of the Secretary or of the United States (a) to exercise any powers granted by the act or otherwise, or (b) in accordance with such powers, to act in the premises whenever such action is deemed advisable.

§ 73 Agents.

The Secretary may, by designation in writing, name any officer or employee of the United States, or name any agency or division in the U.S. Department of Agriculture, to act as his agent or representative in connection with any of the provisions of this part.

§ 74 Personal liability.

No member or alternate member of the committee and no employee or agent of the committee shall be held personally responsible, either individually or jointly with others, in any way whatsoever, to any person for errors in judgment, mistakes, or other acts, either of commission or omission, as such member, alternate, employee or agent, except for acts of dishonesty, willful misconduct or gross negligence.

§ 75 Duration of immunities.

The benefits, privileges, and immunities conferred upon any person by virtue of this part shall cease upon its termination, except with respect to acts done under and during the existence of this part.

§ 76 Separability.

If any provision of this part is declared invalid or the applicability thereof to any person, circumstance or thing is held invalid, the validity of the remainder of this part or the applicability thereof to any other person, circumstance or thing shall not be affected thereby.

§ 77 Effective term.

The provisions of this part, and of any amendment thereto, shall become effective at such time as the Secretary may declare above his signature and shall continue in force until terminated in one of the ways specified in § 78.

§ 78 Termination.

(a) *Failure to effectuate.* The Secretary shall terminate or suspend the operation of any or all of the provisions of this order whenever he finds that such provisions obstruct or do not tend to effectuate the declared policy of the act.

(b) *Referendum.* The Secretary shall terminate the provisions of this part at the end of any marketing year whenever he finds that such termination is favored by a majority of the producers who, during a representative period determined by the Secretary, produced for market more than 50 percent of the volume of spearmint oil so produced in the production area: *Provided,* That any referendum pursuant to an order issued by the Secretary to determine whether or not producers favor termination of this part shall be held during the first 15 days of October, but such termination shall be effective only if announced on or before November 15 of the then current marketing year.

(c) *Termination of act.* The provisions of this part shall, in any event, terminate whenever the provisions of the act authorizing them cease to be in effect.

§ 79 Proceedings after termination.

Upon termination of the provisions of this part the committee shall, for the purpose of liquidating the affairs of the committee, continue as trustees of all the funds and property then in its possession, or under its control, including claims for any funds unpaid or property not delivered at the time of such termination. The said trustees shall (a) continue in such capacity until discharged by the Secretary; (b) from time to time account for all receipts and disbursements and deliver all property on hand, together with all books and records of the committee and of the trustees, to such persons as the Secretary may direct; and (c) upon the request of the Secretary, execute such assignments or other instruments necessary or appropriate to vest in such person full title and right to all of the funds, property, and claims vested in the committee or the trustees pursuant thereto. Any person to whom funds, property, or claims have been transferred or delivered, pursuant to this section, shall be subject to the same obligation imposed upon the committee and upon the trustees.

§ 80 Effect of termination or amendment.

Unless otherwise expressly provided by the Secretary, the termination of this part or of any regulation issued pursuant to this part, or the issuance of any amendment to either thereof, shall not (a) affect or waive any right, duty, obligation, or liability which shall have arisen or which may thereafter arise in connection with any provisions of this part or any regulation issued hereunder, or (b) release or extinguish any violation of this part or any regulation issued hereunder, or (c) affect or impair any rights or remedies of the Secretary or any other person with respect to any such violation.

§ 81 Counterparts.

This agreement may be executed in multiple counterparts and when one counterpart is signed by the Secretary, all such counterparts shall constitute, when taken together, one and the same instrument as if all signatures were contained in one original. * * *

§ 82 Additional parties.

After the effective date hereof, any handler may become a party to this

agreement if a counterpart is executed by him and delivered to the Secretary. This agreement shall take effect as to such new contracting party at the time such new counterpart is delivered to the Secretary, and the benefits, privileges and immunities conferred by this agreement shall then be effective as to such new contracting party. * * *

§ 83 Order with marketing agreement.

Each signatory handler hereby requests the Secretary to issue, pursuant to the act, an order providing for regulating the handling of spearmint oil in the same manner as is provided for in this agreement. * * *

Dated: January 27, 1971.

CLAYTON YEUTTER,
Administrator.

[FR Doc.71-1339 Filed 2-1-71;8:47 am]

[7 CFR Part 1030]

[Docket No. AO-361-A2-RO2]

MILK IN CHICAGO REGIONAL MARKETING AREA

Partial Decision on Proposed Amendments to Marketing Agreement and to Order

A public hearing was held upon proposed amendments to the marketing agreement and the order regulating the handling of milk in the Chicago Regional marketing area. The hearing was held, pursuant to the provisions of the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601 et seq.), and the applicable rules of practice (7 CFR Part 900), at Madison, Wis., on October 20 and 21, 1970, pursuant to notices thereof which were issued on August 3, 1970 (35 F.R. 12545) and August 21, 1970 (35 F.R. 13660).

Upon the basis of the evidence introduced at the hearing and the record thereof, the Deputy Administrator, Regulatory Programs, on December 14, 1970 (35 F.R. 19116) filed with the Hearing Clerk, U.S. Department of Agriculture, his partial recommended decision containing notice of the opportunity to file written exceptions thereto.

The material issues, findings and conclusions, rulings, and general findings of the partial recommended decison are hereby approved and adopted and are set forth in full herein subject to the following changes in Issue No. 3:

1. Paragraphs 2, 10, 12, 13, 14, and 17 are deleted.

2. Paragraphs 1, 3, 7, 11, and 16 are revised; and

3. A new paragraph is added immediately following paragraph 11 and a new paragraph is added immediately following paragraph 18.

The material issues on the record of the hearing relate to:

1. Pool plant performance requirements for supply plants and reload points.

2. Diversion of producer milk.

3. Allocating to Class I milk specified receipts from a producer-handler.

This decision deals only with the issue relating to the allocation to Class I milk of specified receipts from a producer-handler. All other issues are reserved for later decision.

FINDINGS AND CONCLUSIONS

The following findings and conclusions on issue No. 3 are based on evidence presented at the hearing and the record thereof:

3. *Allocating to Class I milk specified receipts from a producer-handler.* No change should be made in the allocation sequence with respect to any receipts of fluid milk products at a pool distributing plant from a producer-handler on the basis of this hearing record.

The order allocates to Class II milk, to the extent possible, any receipt of fluid milk products from a producer-handler. If any such receipt is allocated to Class I milk, the pool plant handler must pay the difference between the Class I price and the Class II price in to the producer-settlement fund on such quantity. This allocation and payment procedure applies regardless of whether the producer-handler has received any Class I milk from the pool plant.

A producer-handler proposed that any packaged fluid milk products received at a pool plant from a producer-handler be allocated to Class I milk, not to be subject to a compensatory payment if the producer-handler has received an equivalent quantity of Class I milk (either bulk or packaged) from any pool plant. A group of operating cooperative associations supported this proposal.

In recent years the sale of milk in glass containers has declined. The single service disposable container, plastic coated paper, has become the major consumer package for milk. Many handlers no longer handle milk packaged in glass bottles.

The proponent producer-handler who packages milk in glass bottles desires to custom package fluid milk products in glass containers for a pool distributing plant. A pool handler who packages most of his milk in paper cartons wishes to discontinue processing milk in glass containers entirely although he would like to continue to serve his customers who desire milk in glass containers. He has indicated interest in having the proponent producer-handler custom package milk in glass containers for him.

Since the order provides that any fluid milk product received at a pool plant from a producer-handler shall receive credit only at the lowest class price, and any transfer to the producer-handler is Class I, the cost of such an arrangement would be prohibitive unless the producer-handler has sufficient surplus milk to fill the custom-packaged sales. The custom-packaged sales would require a constant supply of milk and the producer-handler would need to carry sufficient surplus milk, in addition to his own reserve requirements, to supply such sales.

The proposal was made to allow a producer-handler to offset his transfers of packaged fluid milk to pool plants with purchases of Class I fluid milk products from pool plant sources, rather than assign his own production to surplus in the amount of the custom packaging operation.

Proponent operates a 120-cow dairy farm in addition to his milk plant. Milk produced on his farm accounts for about 60 percent of his total glass bottling operation and the remaining 40 percent is purchased in bulk from pool plants. In addition, he purchases packaged milk products from the pool handler for whom he wants to custom bottle.

The recommended decision found that in the situation where a producer-handler is clearly performing a custom bottling operation for a pool plant handler, and the transfers of fluid milk products between the two plants are strictly for this purpose, the custom-packaged milk returned to the same pool distributing plant would not represent the producer-handler's surplus. Such milk may be clearly identified as the quantity of bulk Class I milk received from the pool distributing plant for custom processing. Thus, it was concluded that bulk Class I milk shipments of fluid milk products from a pool distributing plant for which a producer-handler is custom bottling should be permitted to offset as Class I the packaged fluid milk products transferred to such pool distributing plant by the producer-handler.

In the exceptions filed by the proponent producer-handler, it was claimed the above described recommended amendment would not be helpful in his situation. He stated there exists no economical way for him to transport bulk milk from the pool distributing plant for which he is custom bottling to his plant because the pool distributing plant is located 60 miles away. To make the custom packaging operation economical, he stated he would need to continue purchasing Class I milk from a nearby pool plant. Consequently, proponent repeated in his exceptions an earlier request that Class I receipts from other pool plants also should count toward the offset. This proposal should not be adopted, however.

Producer-handlers are allowed under this order to purchase unlimited quantities of fluid milk products from pool plant sources. Although the matter of limiting a producer-handler's supplemental supplies was not an issue at the hearing, no change should be made that would expand the possibilities for a producer-handler to shift to pool producers the burden of his reserve supplies.

If a producer-handler were allowed to use packaged fluid milk products he receives from the pool distributing plant for which he is custom bottling or any fluid milk products, bulk or packaged, he receives from other pool plants to offset his custom packaging operation, the situation could arise where a pool distributing plant could purchase milk at less than the Class I price. A producer-handler who receives Class I milk on a continuing basis from a pool plant and who also has own farm milk in excess

of his Class I requirements might well be willing to package this milk in surplus and sell it to a pool distributing plant at a price which would net the seller something in excess of its value as surplus but less than the Class I price. The operator of the pool distributing plant obviously would have an incentive to purchase such milk for competitive advantage. For these reasons, it would not be appropriate to permit other receipts to count toward the offset.

No testimony was presented at the hearing in opposition to the producer-handler's proposal. However, two briefs were filed expressing opposition to it. An association of Chicago milk dealers filed a brief opposing any change which would enable a producer-handler to receive more favorable treatment under the order than currently. A large Wisconsin bargaining cooperative association, also filing an opposition brief, contended that when a handler's business expands beyond the point of occasional need for supplementary fluid milk supplies, he should no longer be considered a producer-handler. While many Federal milk orders do place a limit on the quantities that an exempt producer-handler may purchase from regulated sources, there was no proposal before the hearing to deny producer-handler status on the basis of the amount of fluid milk products he purchases from pool plants.

There is no apparent interest at this time in the provision set forth in the recommended decision. The pool plant handler for whom proponent would be custom-packaging fluid milk products did not participate in the hearing. It is hereby concluded that no change in the order should be made on the basis of this proceeding.

RULINGS ON PROPOSED FINDINGS AND CONCLUSIONS

Briefs and proposed findings and conclusions were filed on behalf of certain interested parties. These briefs, proposed findings and conclusions and the evidence in the record were considered in making the findings and conclusions set forth above. To the extent that the suggested findings and conclusions filed by interested parties are inconsistent with the findings and conclusions set forth herein, the request to make such findings or reach such conclusions are denied for the reasons previously stated in this decision.

Rulings on exceptions. In arriving at the findings and conclusions, and the regulatory provisions of this decision, each of the exceptions received was carefully and fully considered in conjunction with the record evidence. To the extent that the findings and conclusions, and the regulatory provisions of this decision are at variance with any of the exceptions, such exceptions are hereby overruled for the reasons previously stated in this decision.

Determination. The findings and conclusions of this partial decision do not require any changes in the regulatory provisions of the order regulating the handling of milk in the Chicago Regional marketing area.

Signed at Washington, D.C., on January 28, 1971.

PHILIP C. OLSSON,
Acting Assistant Secretary.

[FR Doc.71-1341 Filed 2-1-71;8:48 am]

[7 CFR Ch. IX]

[Docket No. AO-373]

LETTUCE GROWN IN CALIFORNIA, ARIZONA, COLORADO, NEW MEXICO, AND DESIGNATED PART OF TEXAS

Notice of Hearing on Proposed Marketing Agreement and Order; Correction

The entire second paragraph of the notice of hearing published in the January 27, 1971, issue of the FEDERAL REGISTER (36 F.R. 1266) on a proposed marketing agreement and order regulating the handling of lettuce grown in California, Arizona, Colorado, New Mexico, and designated part of Texas is hereby corrected by substituting therefor the following:

The public hearing is for the purpose of: (a) Receiving evidence with respect to the economic and marketing conditions which relate to the proposed marketing agreement and order, hereinafter set forth, and to any appropriate modifications thereof;

(b) Determining whether the handling of lettuce grown in the proposed production area is in the current of interstate or foreign commerce or directly burdens, obstructs, or affects interstate or foreign commerce;

(c) Determining whether there is a need for a marketing agreement or order regulating the handling of such lettuce; and

(d) Determining whether the proposed marketing agreement and order or appropriate modification thereof will tend to effectuate the declared policy of the Act.

* * * * *

Dated: January 29, 1971.

JOHN C. BLUM,
Deputy Administrator,
Regulatory Programs.

[FR Doc.71-1488 Filed 2-1-71;8:50 am]

DEPARTMENT OF COMMERCE

U.S. Travel Service

[15 CFR Part 1200]

ISSUANCE OF U.S. TRAVEL SERVICE GRANTS TO PROMOTE TRAVEL TO STATES OR THEIR POLITICAL SUBDIVISIONS BY FOREIGN RESIDENTS

Notice of Proposed Rule Making

Notice is hereby given that the U.S. Travel Service, Department of Commerce, is considering proposed regulations implementing the amendments made by Public Law 91-477 to the International Travel Act of 1961, as amended (22 U.S.C. 2121 et seq.). These amendments include a Federal matching grant program to enable the Federal Government to enlist the support of States, cities, and regional groupings of States in an effort to attract greater numbers of foreign visitors to the United States and to upgrade and improve the tourist host and reception facilities in the States. Under this grant program, the Federal Government is authorized to provide up to 50 percent of the cost of any project. The purpose of the proposed regulations set forth below is to prescribe the procedures for the administration of the Federal grant program.

All persons who desire to submit written views or comments for consideration in connection with the issuance of these regulations, should file them in duplicate with the Assistant Secretary of Commerce for Tourism, United States Travel Service, U.S. Department of Commerce, Washington, D.C. 20230, within 20 days of the date of publication of this notice in the FEDERAL REGISTER.

Sec.

1200.1 Background and purpose.
1200.2 Definitions.
1200.3 Applications for tourism development grant-in-aid.
1200.4 Action on application.
1200.5 Grant accounting and records.
1200.6 Reports.
1200.7 Inspection and audit.
1200.8 Publications.
1200.9 Collection of information.
1200.10 Termination.
1200.11 Repayment.
1200.12 Federal coordination.

AUTHORITY: The provisions of this part are issued pursuant to Public Law 87-63, as amended and Public Law 91-477; Department of Commerce Organization Order No. 10-7 of Nov. 12, 1970.

§ 1200.1 Background and purpose.

The regulations in this part are issued under the authority of the International Travel Act of 1961, as amended. The purpose of the Act is to strengthen the domestic and foreign commerce of the United States; promote friendly understanding and appreciation of the United States by encouraging foreign residents to visit the States, as defined in §1200.2; and facilitate international travel in general. On October 21, 1970, the Act was amended by Public Law 91-477. One of the amendments made to the Act by Public Law 91-477 authorized the U.S. Travel Service to make matching Federal grants to the States, cities, and regional groupings of States in an effort to encourage foreign residents to visit the United States and to upgrade and improve the tourist host and reception facilities in this country thereby furthering the stated purposes of the Act.

§ 1200.2 Definitions.

(a) "Act" means the International Travel Act of 1961, as amended (22 U.S.C. 2121 et seq.).

(b) "Assistant Secretary" means the Assistant Secretary of Commerce for

Tourism or such official as may be designated to act in his behalf.

(c) "State" means one of the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Trust Territory of the Pacific Islands.

(d) "Political subdivision" means a unit of local government, including specifically, a county, municipality, city, town, township, or other special district created by or pursuant to law.

(e) "Designated agency" means the institution or agency which has been designated as administrator of the grant program by the State or political subdivision or combination thereof.

(f) "Travel promotion project" means an activity or program designed to enhance a State or political subdivision as a desired travel destination of residents of foreign countries or to inform such residents and to encourage them to visit a State or political subdivision through such means as:

(1) Preparing and disseminating materials, including brochures, leaflets, booklets, posters, and displays featuring domestic regional and local attractions in appropriate foreign languages in foreign cities and countries that constitute a potential travel market to the States.

(2) Carrying out either singly or in conjunction with other States and/or other political subdivisions and/or with U.S. Travel Service, special promotions of facilities, attractions, events and services of an area by means of exhibits, shows, films, etc.

(3) Planning, developing, and sponsoring advertising campaigns in foreign countries to inform and encourage foreign residents to visit.

(4) Undertaking projects to upgrade and improve tourist facilities and services to better serve the foreign resident.

(5) Carrying out other projects that indicate a high probability of increasing foreign tourism.

(g) "Matching funds" means funds that are provided by the State or political subdivision or by a combination thereof, or from other non-Federal sources and may include fees, contributions, donations, gifts of money, and special user charges from persons and private profit or nonprofit firms, organizations, or institutions.

§ 1200.3 Applications for tourism development grant-in-aid.

(a) Each designated agency seeking a Federal grant for a travel promotional project on behalf of a State or political subdivision or combination thereof shall file an application, as further specified below, with the Assistant Secretary.

(b) Every application, exhibit, or enclosure, except where specifically waived by the Assistant Secretary, shall be in quadruplicate, duly authenticated and referenced, and addressed to the Assistant Secretary of Commerce for Tourism, U.S. Travel Service, U.S. Department of Commerce, Washington, D.C. 20230.

(c) Every application shall be on USTS Form, Application for Tourism Development Grant-in-Aid, a sample of which is set forth as Appendix A and hereby made a part of these regulations, and shall contain the date, address, and official title of the designated agency and shall be signed by an authorized representative.

(d) Every application, except where specifically waived by the Assistant Secretary, shall be accompanied by the following exhibits:

(1) *Exhibit No. 1.* A statement setting forth in detail the current level of tourism in area in terms of (i) numbers of tourists in area, both foreign and domestic; (ii) impact of tourism on area economy (i.e., employment and income); and (iii) current efforts to develop and promote tourism in area.

(2) *Exhibit No. 2.* A project statement setting forth in detail the existing need for Federal assistance, the goals and objectives thereof, in terms of tourism receipts and their effects on area jobs and income, the specific methods proposed for accomplishing these objectives in terms of personnel and funds and the procedures that will be used to evaluate the project.

(3) *Exhibit No. 3.* A statement setting forth in detail the procedures for fiscal control, funding, accounting and auditing to assure proper disbursement of funds paid to the designated agency.

(4) *Exhibit No. 4.* Documentation establishing that the designated agency has coordinated the travel promotion project with other States (when regional cooperation is desirable) and with other publicly supported activities within the States or political subdivision, as appropriate, and the extent and manner in which such coordination has been carried out by identifying such projects and activities and indicating how any duplication of other travel promotion project in the area has been avoided.

(5) *Exhibit No. 5.* Certification by the Governor of the State or the chief political officer of the political subdivision that the designated agency has—(i) Established adequate standards and rules to insure that no officer or employee of the State or political subdivision or their designated agencies shall receive compensation from sources other than his employer for tourism development or promotional services for which funds are provided under the Act and that no such officer or employee shall otherwise maintain any private interest in conflict with his public responsibility. Each designated agency will furnish a copy of the standards and rules which are established to avoid any conflict of interest in connection with the administration of a grant which may be made under the Act. Such rules shall clearly set forth the standards and procedures which officers, employees, and consultants can follow to avoid any conflict of interest. (ii) Determined that matching funds will be available from States or other non-Federal sources. In addition, each designated agency shall indicate the basis for the determination by identifying such sources. (iii) Determined that such travel promotional project supported by a grant under the Act does not provide or arrange transportation for, or accommodations to, persons traveling between foreign countries and the States in competition with any private business engaged in providing or arranging for such transportation and accommodations. (iv) Planned no services specially related to a particular firm or company, public work or other capital project except insofar as the services are of general concern to the industry and commerce of the State or political subdivision. If the designated agency has planned services which are specially related to a particular firm or company, public work or other capital project, a statement shall be furnished by the designated agency to the Assistant Secretary describing such services and the basis for the determination that such services are of general concern to the industry and commerce of the State or political subdivision.

§ 1200.4 Action on application.

(a) Upon receipt of an application, the the Assistant Secretary shall designate an employee of the U.S. Travel Service who will investigate the application and accompanying exhibits for compliance with the provisions of § 1200.3 and report his findings with respect thereof to the Assistant Secretary.

(b) The Assistant Secretary, within a reasonable time after receipt of the report referred to in paragraph (a) of this section, may authorize a grant to the designated agency provided he finds that (1) the travel promotional project is designed to carry out the purposes of the Act; (2) the project will facilitate and encourage travel to the State or political subdivision or combination thereof by foreign residents; and (3) matching funds will be available from State or other non-Federal sources.

(c) In no event shall the amount of any grant made under the regulations of this part for any travel promotion project exceed 50 percent of the total cost of the project.

§ 1200.5 Grant accounting and records.

(a) Accounting for grant funds shall be in accordance with the State or political subdivision's usual accounting practices, consistently applied, regardless of source of funds. Any generally accepted accounting system and internal control procedures, including provisions for audit, will be satisfactory: *Provided, however,* That they meet the following requirements:

(1) Separate ledger accounts are established for each grant or grant project which conforms to or permits ready identification with grant budget categories. Such accounts should provide separate and specific accountability of receipts, expenditures and balance separate accounts may be maintained for each annual period within the total grant period, but are not required.

(2) Supporting records of project expenditures are maintained in sufficient detail and itemization to show the exact nature of each expenditure. Such records should clearly indicate to which major

budget category and subitems within the category an expenditure is charged.

(3) Reimbursements of travel expenses are supported by vouchers containing the signature of the individual performing the travel and the person authorized by the designated agency to approve such travel. Vouchers should show the starting point and destination of travel, dates of travel, itemization of amounts expended for transportation and a statement of the amount of per diem due (not to exceed the per diem authorized by the State or political subdivision or the rate of $25 per day (whichever is less)).

(4) Each expenditure is referenced to a supporting purchase order, contract, voucher, invoice or bill, properly approved. Special voucher forms are not necessary since ordinarily the documents used by a designated agency to support expenditures from its own funds will be sufficient. Whenever possible, separate orders should be issued for purchases charged to grant funds in order that bills or invoices will not contain items charged to other funds.

(5) Grant number, account number, date and expense classification are identified on invoices or vouchers charged to other funds.

(6) Payroll authorizations are maintained to effect control on salaries and wages charged against grant funds. These authorizations shall be approved by the appropriate authority in the State or political subdivision.

(7) Some objective evidence of time devoted to the grant project is maintained. As a minimum, a statement should be prepared at the end of each pay period showing the names of employees, the percentage of time each devoted to grant projects, the gross amounts of salaries and approval by appropriate authority in the designated agency.

(8) Adequate records are maintained supporting charges for fringe benefits, such as pensions, retirement, social security tax, (FICA) etc., when included in the project budgets.

(9) All canceled checks are filed and are readily accessible for examination. When cash disbursements are made, they must be supported by receipts approved by appropriate authority.

(10) The accounting system is adequate to permit immediate identification of project balances and funds in general accounts, or separate bank accounts may be established for project funds.

(11) Inventory records are maintained for all equipment purchased with grant funds.

(12) The designated agency receiving Federal funds under the Act shall require all subcontractors to provide documentation covering receipt and expenditure of grant and matching funds for which the designated agency is held responsible.

(13) The grant accounting system provides for adequate internal audits and the use of written policies and instructions defining accounting policies, procedures and controls.

(14) All income from project activity (sale of publications, entrance fees, user charges, etc.) is accounted for and clearly identified in financial reports.

§ 1200.6 Reports.

Financial reports and descriptive reports will be required as the Assistant Secretary may specify. Each designated agency is also required to submit to the Assistant Secretary within 90 days after the official termination date of the grant (a) a final financial report, and (b) a descriptive report describing and evaluating the project accomplishments.

§ 1200.7 Inspection and audit.

(a) The Assistant Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access for the purpose of audit and examination, any books, documents, papers, and records of the designated agency that are pertinent to Federal assistance received under the Act.

(b) Financial records must be kept on file for a minimum of 3 years following the termination of the grant. The required retention period may be extended by written notification by the Assistant Secretary.

§ 1200.8 Publications.

(a) If the designated agency desires to publish information resulting from the grant, the general provisions accompanying the grant will contain regulations regarding acknowledgement and disclaimer requirements.

(b) A determination as to responsibilities will be made on a case-by-case basis; however, the Government reserves a nonexclusive license to use and reproduce for government purposes, without payment, any publishable matter or information collected, including copyrighted material, arising out of the designated agency's activities.

§ 1200.9 Collection of information.

If the designated agency collects information from the public on its own initiative in connection with a research or other general purpose project, it will not, without prior written approval of the Assistant Secretary, in any way represent that the information is being collected by or for a Federal agency.

§ 1200.10 Termination.

(a) Grants may be terminated, in whole or in part, by the Assistant Secretary if he finds that any of the following conditions exist:

(1) The designated agency, or those with whom such agency has contracted or subcontracted, is not complying with the provisions of the Act, with the regulations in this part, or with any of the provisions of the grant; or

(2) Any funds paid to the designated agency under the provisions of the Act or the regulations in this part have been lost, misapplied, or otherwise diverted from or improperly used or expended for other than the purposes for which they were paid.

(b) The Assistant Secretary may, in his sole discretion, terminate the grant, in whole or in part, if he finds that any of the conditions described in subsection (a) to exist. Such termination shall be effective 30 days after the mailing of a written notice of termination to the designated agency.

§ 1200.11 Repayment.

In the event that the grant is terminated, any funds that have been paid to the designated agency by the U.S. Travel Service which have not been expended or contracted for upon receipt of the notice of termination shall be repaid to the Assistant Secretary within 30 days of such notice.

§ 1200.12 Federal coordination.

The Assistant Secretary may, prior to approving any travel promotional project, take such steps as he deems appropriate, to coordinate such project with other Federal agencies or seek the advice of such committees as may be established for the purpose of reviewing tourist development or promotion plans and programs.

Done in Washington, D.C., this 25th day of January 1971.

C. LANGHORNE WASHBURN,
Assistant Secretary of Commerce for Tourism, U.S. Travel Service, Department of Commerce.

[FR Doc.71-1370 Filed 2-1-71;8:50 am]

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[49 CFR Part 571]

[Docket No. 4-2; Notice 4]

WARNING DEVICES

Extension of Time for Comments

A notice of proposed rulemaking on Warning Devices was published on November 11, 1970 (35 F.R. 17350). The notice set February 5, 1971, as the closing date for comments on the proposal. Several persons have petitioned for an extension of the closing date in order to allow additional time to compile data and study the impact of the proposal, and to evaluate more completely the proposed performance requirements. In response to these petitions, the closing date for comments is hereby extended to May 6, 1971.

This notice is issued under the authority of sections 103 and 119 of the National Traffic and Motor Vehicle Safety Act of 1966 (15 U.S.C. 1392, 1407) and the delegations of authority at 49 CFR 1.51 (35 F.R. 4955) and 49 CFR 501.8 (35 F.R. 11126).

Issued on January 29, 1971.

RODOLFO A. DIAZ,
Acting Associate Administrator, Motor Vehicle Programs.

[FR Doc.71-1458 Filed 2-1-71;8:50 am]

ATOMIC ENERGY COMMISSION

[10 CFR Part 50]

LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

Control of Releases of Radioactivity to the Environment

Statement of considerations. On December 3, 1970, the Atomic Energy Commission published in the FEDERAL REGISTER (35 F.R. 18385) amendments to 10 CFR Part 50 of its regulations to provide for design and operating requirements to minimize quantities of radioactivity released in gaseous and liquid effluents from nuclear power reactors. The amendments became effective on January 2, 1971.

The amendments to Part 50 include a new § 50.34a, Design objectives for equipment to control releases of radioactive material in effluents—nuclear power reactors. Paragraph (b) of § 50.34a specifies certain information which must be included in each application for a permit to construct a nuclear power reactor, including estimates of quantities of principal radionuclides expected to be released annually to unrestricted areas in effluents produced during normal reactor operations.

The Commission now has under consideration the addition of a provision to § 50.34a(b) which would require that each application for a permit to construct a nuclear power reactor include an estimate of the range of maximum potential annual radiation doses to individuals and suitable samples of population groups resulting from the principal radionuclides expected to be released in liquid and gaseous effluents produced during normal reactor operations.

This information that would be provided under the proposed amendment would assist in evaluating the public health significance of the low level releases of radioactivity in gaseous and liquid effluents from each nuclear power reactor produced during normal reactor operations. The estimates of exposures would take into account the environmental factors of the particular site where the power reactor is to be located.

Pursuant to the Atomic Energy Act of 1954, as amended, and section 553 of title 5 of the United States Code, notice is hereby given that adoption of the following amendment to 10 CFR Part 50 is contemplated. All interested persons who desire to submit written comments or suggestions for consideration in connection with the proposed amendment should send them to the Secretary of the Commission, U.S. Atomic Energy Commission, Washington, D.C. 20545, Attention: Chief, Public Proceedings Branch, within 60 days after publication of this notice in the FEDERAL REGISTER. Comments and suggestions received after that period will be considered if it is practicable to do so, but assurance of consideration cannot be given except as to comments filed within the period specified. Copies of comments received may be examined in the Commission's Public Document Room at 1717 H Street NW., Washington, DC.

Paragraph (b)(2) of § 50.34a is amended by deleting the "and" at the end of subdivision (i), deleting the period and adding "; and" at the end of subdivision (ii), and adding a new subdivision (iii).

As amended § 50.34a(b)(2) reads as follows:

§ 50.34a Design objectives for equipment to control releases of radioactive material in effluents—nuclear power reactors.

* * * * *

(b) Each application for a permit to construct a nuclear power reactor shall include:

(1) * * *

(2) An estimate of:

(i) The quantity of each of the principal radionuclides expected to be released annually to unrestricted areas in liquid effluents produced during normal reactor operations;

(ii) The quantity of each of the principal radionuclides of the gases, halides, and particulates expected to be released annually to unrestricted areas in gaseous effluents produced during normal reactor operations; and

(iii) The range of maximum potential annual radiation doses to individuals and suitable samples of population groups resulting from the principal radionuclides expected to be released in liquid and gaseous effluents produced during normal reactor operations.

(Sec. 161, 68 Stat. 948; 42 U.S.C. 2201)

Dated at Germantown, Md., this 22d day of January 1971.

For the Atomic Energy Commission.

W. B. McCOOL,
Secretary of the Commission.

[FR Doc.71-1374 Filed 2-1-71;8:50 am]

ENVIRONMENTAL PROTECTION AGENCY

[42 CFR Part 481]

AIR QUALITY CONTROL REGIONS

Proposed Designation of Regions; Consultation With Appropriate State and Local Authorities

Notice is hereby given of a prosposal to designate Intrastate Air Quality Control Regions in the State of Michigan as set forth in the following new §§ 481.195–481.197 inclusive which would be added to Part 481 of Title 42, Code of Federal Regulations. It is proposed to make such designations effective upon republication.

Interested persons may submit written data, views, or arguments in triplicate to the Office of the Acting Commissioner, Air Pollution Control Office, Room 17–82, 5600 Fishers Lane, Rockville, MD 20852. All relevant material received not later than 30 days after the publication of this notice will be considered.

Interested authorities of the States of Wisconsin, Ohio, Indiana, and Michigan and appropriate local authorities, both within and without the proposed regions, who are affected by or interested in the proposed designations, are hereby given notice of an opportunity to consult with representatives of the Administrator concerning such designations. Such consultation will take place at 2 p.m., February 9, 1971, Room 217, Federal Office Building, 216 Townsend Street, Lansing, MI.

Mr. Doyle J. Borchers is hereby designated as Chairman for the consultation. The Chairman shall fix the time, date, and place of later sessions and may convene, reconvene, recess, and adjourn the sessions as he deems appropriate to expedite the proceedings.

State and local authorities wishing to participate in the consultation should notify the Chairman, Mr. Doyle J. Borchers, Air Pollution Control Office, Environmental Protection Agency, Parklawn Building, Room 17–82, 5600 Fishers Lane, Rockville, MD 20852.

In Part 481 the following new sections are proposed to be added to read as follows:

§ 481.195 Central Michigan Intrastate Air Quality Control Region.

The Central Michigan Intrastate Air Quality Control Region (481.195) consists of the territorial area encompassed by the boundaries of the following jurisdictions or described area (including the territorial area of all municipalities (as defined in section 302(f) of the Clean Air Act, 42 U.S.C. 1857h(f)) geographically located within the outermost boundaries of the area so delimited):

In the State of Michigan:

Allegan County.
Arenac County.
Bay County.
Clare County.
Genesee County.
Gladwin County.
Gratiot County.
Huron County.
Ionia County.
Iosco County.
Isabella County.
Kent County.
Lake County.
Lapeer County.
Mason County.
Mecosta County.
Midland County.
Montcalm County.
Muskegon County.
Newaygo County.
Oceana County
Ogemaw County.
Osceola County.
Ottawa County.
Roscommon County.
Saginaw County.
Sanilac County
Shiawassee County.
Tuscola County.

§ 481.196 South Central Michigan Intrastate Air Quality Control Region.

The South Central Michigan Intrastate Air Quality Control Region (Michigan) consists of the territorial area encompassed by the boundaries of the following jurisdictions or described area (including the territorial area of all municipalities (as defined in section 302 (f) of the Clean Air Act, 42 U.S.C. 1857h (f)) geographically located within the outermost boundaries of the areas so delimited):

In the State of Michigan:

Barry County.
Branch County.
Calhoun County.
Clinton County.
Eaton County.
Hillsdale County.
Ingham County.
Jackson County.
Kalamazoo County.
Lenawee County.
Livingston County.
St. Joseph County.
Washtenaw County.

§ 481.197 Upper Michigan Intrastate Air Quality Control Region.

The Upper Michigan Intrastate Air Quality Control Region (Michigan) consists of the territorial area encompassed by the boundaries of the following jurisdictions or described area (including the territorial area of all municipalities (as defined in section 302(f) of the Clean Air Act, 42 U.S.C. 1857h(f)) geographically located within the outermost boundaries of the area so delimited):

In the State of Michigan:

Alcona County.	Kalkaska County.
Alger County.	Keweenaw County.
Alpena County.	Leelanau County.
Antrim County.	Luce County.
Baraga County.	Mackinac County.
Benzie County.	Manistee County.
Cheboygan County.	Marquette County.
Charlevoix County.	Missaukee County.
Chippewa County.	Montmorency County.
Crawford County.	Ontonagon County.
Emmet County.	Oscoda County.
Gogebic County.	Otsego County.
Grand Traverse County.	Presque Isle County.
Houghton County.	Schoolcraft County.
Iron County.	Wexford County.

This action is proposed under the authority of (section 301(a), 81 Stat. 504; 42 U.S.C. 1857g(a) as amended by section 15(c)(2) of Public Law 91-604).

Dated: January 28, 1971.

WILLIAM D. RUCKELSHAUS,
Administrator.

[FR Doc.71-1436 Filed 2-1-71;8:50 am]

[42 CFR Part 481]

AIR QUALITY CONTROL REGIONS

Proposed Designation of Regions; Consultation With Appropriate State and Local Authorities

Notice is hereby given of a proposal to designate Intrastate Air Quality Control Regions in the State of Indiana as set forth in the following new §§ 481.215-481.218 inclusive which would be added to Part 481 of Title 42, Code of Federal Regulations. It is proposed to make such designations effective upon republication.

Interested persons may submit written data, views, or arguments is triplicate to the Office of the Acting Commissioner, Air Pollution Control Office, Room 17-82, 5600 Fishers Lane, Rockville, MD 20852. All relevant material received not later than 30 days after the publication of this notice will be considered.

Interested authorities of the States of Michigan, Illinois, Ohio, Kentucky, and Indiana, and appropriate local authorities, both within and without the proposed regions, who are affected by or interested in the proposed designations, are hereby given notice of an opportunity to consult with representatives of the Administrator concerning such designations. Such consultation will take place at 10 a.m., on February 10, 1971, in Room 402, 46 East Ohio Street, Indianapolis, IN.

Mr. Doyle J. Borchers is hereby designated as Chairman for the consultation. The Chairman shall fix the time, date, and place of later sessions and may convene, reconvene, recess, and adjourn the sessions as he deems appropriate to expedite the proceedings.

State and local authorities wishing to participate in the consultation should notify the Chairman, Mr. Doyle J. Borchers, Air Pollution Control Office, Environmental Protection Agency, Room 17-82, 5600 Fishers Lane, Rockville, MD 20852.

In Part 481 the following new sections are proposed to be added to read as follows:

§ 481.215 East Central Indiana Intrastate Air Quality Control Region.

The East Central Indiana Intrastate Air Quality Control Region (Indiana) consists of the territorial area encompassed by the boundaries of the following jurisdictions or described area (including the territorial area of all municipalities (as defined in section 302(f) of the Clean Air Act, 42 U.S.C. 1857h(f)) geographically located within the outermost boundaries of the area so delimited):

In the State of Indiana:

Blackford County.	Jay County.
Delaware County.	Madison County.
Grant County.	Randolph County.
Henry County.	Wayne County.

§ 481.216 Northeast Indiana Intrastate Air Quality Control Region.

The Northeast Indiana Intrastate Air Quality Control Region (Indiana) consists of the territorial area encompassed by the boundaries of the following jurisdictions or described area (including the territorial area of all municipalities (as defined in section 302(f) of the Clean Air Act, 42 U.S.C. 1857h(f)) geographically located within the outermost boundaries of the area so delimited):

In the State of Indiana:

Adams County.	Noble County.
Allen County.	Steuben County.
De Kalb County.	Wells County.
Huntington County.	Whitley County.
Lagrange County.	

§ 481.217 Southern Indiana Intrastate Air Quality Control Region.

The Southern Indiana Intrastate Air Quality Control Region (Indiana) consists of the territorial area encompassed by the boundaries of the following jurisdictions or described area (including the territorial area of all municipalities (as defined in section 302(f) of the Clean Air Act, 42 U.S.C. 1857h(f)) geographically located within the outermost boundaries of the area so delimited):

In the State of Indiana:

Bartholomew County.	Greene County.
Brown County.	Harrison County.
Crawford County.	Jackson County.
Daviess County.	Jefferson County.
Decatur County.	Jennings County.
Fayette County.	Lawrence County.
Franklin County.	Martin County.
Orange County.	Monroe County.
Owen County.	Scott County.
Ripley County.	Switzerland County.
Rush County.	Union County.
	Washington County.

§ 481.218 Wabash Valley Intrastate Air Quality Control Region.

The Wabash Valley Intrastate Air Quality Control Region (Indiana) consists of the territorial area encompassed by the boundaries of the following jurisdictions or described area (including the territorial area of all municipalities (as defined in section 302(f) of the Clean Air Act, 42 U.S.C. 1857h(f)) geographically located within the outermost boundaries of the area so delimited):

In the State of Indiana:

Benton County.	Parke County.
Carroll County.	Pulaski County.
Cass County.	Putnam County.
Clay County.	Starke County.
Clinton County.	Sullivan County.
Fountain County.	Tippecanoe County.
Fulton County.	Tipton County.
Howard County.	Vermillion County.
Jasper County.	Vigo County.
Knox County.	Wabash County.
Miami County.	Warren County.
Montgomery County.	White County.
Newton County.	

This action is proposed under the authority of (section 301(a), 81 Stat. 504; 42 U.S.C. 1857g(a) as amended by section 15(c)(2) of Public Law 91-604).

Dated: January 28, 1971.

WILLIAM D. RUCKELSHAUS,
Administrator.

[FR Doc.71-1449 Filed 2-1-71;8:50 am]

FEDERAL POWER COMMISSION

[18 CFR Parts 101, 104, 201, 204]

[Docket No. R-409]

UNIFORM SYSTEMS OF ACCOUNTS FOR PUBLIC UTILITIES AND LICENSEES AND FOR NATURAL GAS COMPANIES

Disposition of Balance in Accumulated Deferred Tax Accounts Attributable To Property Retired Prior to the Expiration of Its Estimated Useful Life; Notice of Extension of Time

JANUARY 26, 1971.

On January 11, 1971, Haskins & Sells filed a request for an extension of time within which to file comments in the above-designated matter.

Upon consideration, notice is hereby given that the time is extended to and including February 16, 1971, within which any interested person may submit data, views, comments or suggestions in writing to the notice of proposed rulemaking (35 F.R. 18627), issued December 2, 1970, in the above-designated matter.

GORDON M. GRANT,
Secretary.

[FR Doc.71-1326 Filed 2-1-71;8:46 am]

Notices

DEPARTMENT OF THE TREASURY

Bureau of Customs

ASBESTOS-CEMENT PIPE FROM JAPAN

Antidumping Proceeding Notice

JANUARY 25, 1971.

On November 13, 1970, information was received in proper form pursuant to §§ 153.26 and 153.27, Customs Regulations (19 CFR 153.26, 153.27), indicating a possibility that asbestos-cement pipe from Japan is being, or likely to be, sold at less than fair value within the meaning of the Antidumping Act, 1921, as amended (19 U.S.C. 160 et seq.).

There is evidence on record concerning injury to or likelihood of injury to or prevention of establishment of an industry in the United States.

Having conducted a summary investigation as required by § 153.29 of the Customs Regulations (19 CFR 153.29) and having determined as a result thereof that there are grounds for so doing, the Bureau of Customs is instituting an inquiry to verify the information submitted and to obtain the facts necessary to enable the Secretary of the Treasury to reach a determination as to the fact or likelihood of sales at less than fair value.

A summary of information received from all sources is as follows:

The information received tends to indicate that the prices of the merchandise sold for exportation to the United States are less than the prices for home consumption.

This notice is published pursuant to § 153.30 of the Customs Regulations (19 CFR 153.30).

[SEAL] EDWIN F. RAINS,
Acting Commissioner of Customs.

[FR Doc.71-1375 Filed 2-1-71;8:50 am]

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

WYOMING

Notice of Termination of Proposed Withdrawal and Reservation of Lands

JANUARY 25, 1971.

Notice of a Bureau of Land Management application, Wyoming 25088, for withdrawal and reservation of lands to protect the Crooked Creek Fossil Area in Wyoming was published as F.R. Doc. No. 70-11185, on page 13534 of the issue for August 25, 1970. This Bureau has canceled its application involving the lands described in the FEDERAL REGISTER publication referred to above. Therefore, pursuant to the regulations contained in 43 CFR, Part 2091.2-5, such lands, at 10:00 a.m. on March 1, 1971, will be relieved of the segregative effect of the above-mentioned application. The proposed withdrawal is terminated because adequate protection for the area has been effected by Multiple-Use Management Classification W-15468.

JOHN T. WASSERBURGER,
Acting State Director.

[FR Doc.71-1319 Filed 2-1-71;8:45 am]

[Wyoming 11730, 0319020, 0319654]

WYOMING

Notice of Proposed Classification

JANUARY 26, 1971.

Pursuant to 43 CFR 2462.1, notice is hereby given of a proposal to classify the lands described below for disposal through private exchange under section 8 of the Taylor Grazing Act of June 28, 1934 (48 Stat. 1272) as amended (43 U.S.C. 315g).

These lands consist of six tracts of public land. The primary current and potential use is for grazing. The ownership pattern makes them difficult to manage, and their exchange for other lands having equal or greater dollar value and more important public values, would be in the public interest.

Publication in the FEDERAL REGISTER of this notice of proposed classification segregates the affected lands from all forms of disposal under the public land laws, including the mining laws, except exchange under section 8 of the Taylor Grazing Act. It does not, however, affect the applicability of the public land laws governing the use of the lands under lease, license or permit, or governing the disposal of their mineral or vegetative resources, other than under the mining laws.

For a period of 60 days from the date of this publication, interested parties may submit comments to the district manager of the Casper District Office, Bureau of Land Management, 100 East "B" Street, Casper, WY 82601.

The lands affected by this proposal are described as follows:

SIXTH PRINCIPAL MERIDIAN, WYOMING

NATRONA COUNTY

T. 36 N., R. 79 W.,
Sec. 3, lots 3 and 4, S½NW¼, SW¼NE¼, N½SW¼, SE¼SW¼, W½SE¼, and SE¼SE¼;
Sec. 4, lots 1 and 2, S½NE¼, NE¼SW¼, SW¼SW¼, and N½SE¼;
Sec. 8, NE¼NE¼;
Sec. 9, NW¼NW¼.

T. 37 N., R. 79 W.,
Sec. 1, S½SW¼;
Sec. 2, S½S½ and NE¼SE¼;
Sec. 3, SE¼SE¼;
Sec. 10, NE¼;
Sec. 11, All;
Sec. 12, W½NW¼ and N½SW¼;
Sec. 14, NW¼;
Sec. 22, E½NW¼, NE¼, and S½;
Sec. 23, W½NW¼ and NW¼SW¼;
Sec. 26, NW¼;
Sec. 27, All.

WASHAKIE COUNTY

T. 42 N., R. 86 W.,
Sec. 34, S½N½, N½SW¼, NW¼SE¼, and S½SE¼.

The areas described aggregate 4,112.83 acres.

JOHN T. WASSERBURGER,
Acting State Director.

[FR Doc.71-1355 Filed 2-1-71;8:49 am]

Fish and Wildlife Service

CHASE LAKE NATIONAL WILDLIFE REFUGE

Notice of Public Hearing Regarding Wilderness Proposal

Notice is hereby given in accordance with provisions of the Wilderness Act of September 3, 1964 (Public Law 88-577; 78 Stat. 890-896; 16 U.S.C. 1131-1136), that a public hearing will be held beginning at 7:30 p.m. on April 7, 1971, at Ottertail Power Co. Community Room, Jamestown, Stutsman County, ND, on a proposal leading to a recommendation to be made to the President of the United States by the Secretary of the Interior, regarding the desirability of including the Chase Lake Wilderness proposal within the National Wilderness Preservation System. The wilderness proposal consists of approximately 4,155 acres within the Chase Lake National Wildlife Refuge and is located in Stutsman County, State of North Dakota.

A brochure containing a map and information about the Chase Lake Wilderness proposal may be obtained from the Refuge Manager, Arrowwood National Wildlife Refuge, Edmunds, ND 58434, or the Regional Director, Bureau of Sport Fisheries and Wildlife, Federal Building, Fort Snelling, Twin Cities, MN 55111.

Individuals or organizations may express their oral or written views by appearing at this hearing, or they may submit written comments for inclusion in the official record of the hearing to the Regional Director at the above address by May 22, 1971.

SPENCER H. SMITH,
Acting Director, Bureau of Sport Fisheries and Wildlife.

JANUARY 28, 1971.

[FR Doc.71-1354 Filed 2-1-71;8:49 am]

Office of Hearings and Appeals

[Docket No. M 71-7]

RELIABLE COAL CORP.

Petition for Modification of Interim Mandatory Safety Standard

In accordance with the provisions of section 301(c) of the Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. sec. 861(c) (Supp. V, 1970)), notice is given that the Reliable Coal Corp. has filed a petition to modify the application of section 303(1) of the Act and §75.313 et seq. of 30 CFR to its Kanes Creek mine (#46-01822-0), Preston County, W. Va.

Section 303(1) provides as follows:

The Secretary or his authorized representative shall require, as an additional device for detecting concentrations of methane, that a methane monitor, approved as reliable by the Secretary after the operative date of this title, be installed, when available, on any electric face cutting equipment, continuous miner, long-wall face equipment, and loading machine, except that no monitor shall be required to be installed on any such equipment prior to the date on which such equipment is required to be permissible under section 305(a) of this title. When installed on any such equipment, such monitor shall be kept operative and properly maintained and frequently tested as prescribed by the Secretary. The sensing device of such monitor shall be installed as close to the working face as practicable. Such monitor shall be set to deenergize automatically such equipment when such monitor is not operating properly and to give a warning automatically when the concentration of methane reaches a maximum percentage determined by an authorized representative of the Secretary which shall not be more than 1.0 volume per centum of methane. An authorized representative of the Secretary shall require such monitor to deenergize automatically equipment on which it is installed when the concentration of methane reaches a maximum percentage determined by such representative which shall not be more than 2.0 volume per centum of methane.

The regulations cited (35 F.R. 17903) paraphrase and implement the statutory requirement.

Petitioner proposes to purchase and use, in lieu of the methane monitors required by section 303(1), methane detectors or hand carried methanometers to be used by section bosses for continuous routine periodic checks. Petitioner states that this alternate method of achieving the results of the methane monitor installation required by the Act will at all times guarantee no less than the same measure of protection afforded the miners by section 303(1) and that the application of the statutory standard to the mine will result in a diminution of safety to the miners.

Parties interested in this petition should file their answer or comments with the Office of Hearings and Appeals, Hearings Division, U.S. Department of the Interior, Ballston Tower No. 3, 4015 Wilson Boulevard, Arlington, VA 22203. Copies of the petition are available for inspection at this address.

JAMES M. DAY,
Director,
Office of Hearings and Appeals.

JANUARY 26, 1971.

[FR Doc.71-1350 Filed 2-1-71;8:48 am]

[Docket No. M 71-8]

RELIABLE COAL CORP.

Petition for Modification of Interim Mandatory Safety Standard

In accordance with the provisions of section 301(c) of the Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. § 861(c) (Sub. V, 1970)), notice is given that the Reliable Coal Corp. has filed a petition to modify the application of section 303(1) of the Act and § 75.313 et seq. of 30 CFR to its Masontown mine (#46-01493-0), Preston County, W. Va.

Section 303(1) provides as follows:

The Secretary or his authorized representative shall require, as an additional device for detecting concentrations of methane, that a methane monitor, approved as reliable by the Secretary after the operative date of this title be installed, when available, on any electric face cutting equipment, continuous miner, longwall face equipment, and loading machine, except that no monitor shall be required to be installed on any such equipment prior to the date on which such equipment is required to be permissible under section 305(a) of this title. When installed on any such equipment, such monitor shall be kept operative and properly maintained and frequently tested as prescribed by the Secretary. The sensing device of such monitor shall be installed as close to the working face as practicable. Such monitor shall be set to deenergize automatically such equipment when such monitor is not operating properly and to give a warning automatically when the concentration of methane reaches a maximum percentage determined by an authorized representative of the Secretary which shall not be more than 1.0 volume per centum of methane. An authorized representative of the Secretary shall require such monitor to deenergize automatically equipment on which it is installed when the concentration of methane reaches a maximum percentage determined by such representative which shall not be more than 2.0 volume per centum of methane.

The regulations cited (35 F.R. 17903) paraphrase and implement the statutory requirement.

Petitioner proposes to purchase and use, in lieu of the methane monitors required by section 303(1), methane detectors or hand carried methanometers to be used by section bosses for continuous routine periodic checks. Petitioner states that this alternate method of achieving the results of the methane monitor installation required by the Act will at all times guarantee no less than the same measure of protection afforded the miners by section 303(1) and that the application of the statutory standard to the mine will result in a diminution of safety to the miners.

Parties interested in this petition should file their answer or comments with the Office of Hearings and Appeals, Hearings Division, U.S. Department of the Interior, Ballston Tower No. 3, 4015 Wilson Boulevard, Arlington, VA 22203. Copies of the petition are available for inspection at this address.

JAMES M. DAY,
Director,
Office of Hearings and Appeals.

JANUARY 26, 1971.

[FR Doc.71-1351 Filed 2-1-71;8:48 am]

Office of the Secretary

ROBERT H. LYNCH

Report of Appointment and Statement of Financial Interests

JANUARY 25, 1971.

Pursuant to section 302(a) of Executive Order 10647, the following information on a WOC appointee in the Department of the Interior is furnished for publication in the FEDERAL REGISTER:

Name of appointee: Robert H. Lynch.

Name of employing agency: U.S. Department of the Interior, Office of Oil and Gas.

The title of the appointee's position: Regional Administrator, Region 2, Emergency Petroleum and Gas Administration.

The name of the appointee's private employer or employers: Eastern Pipe Line Division of the Atlantic Pipe Line Co.

The statement of "financial interests" for the above appointee is set forth below.

WALTER J. HICKEL,
Secretary of the Interior.

SEPTEMBER 25, 1970.

APPOINTEE'S STATEMENT OF FINANCIAL INTERESTS

In accordance with the requirements of section 302(b) of Executive Order 10647, I am filing the following statement for publication in the FEDERAL REGISTER:

(1) Names of any corporations of which I am, or had been within 60 days preceding my appointment, on September 25, 1970, as Regional Administrator, EPGA—Region 2, an officer or director:

Atlantic Pipe Line Co.
Petroleum Tankers, Inc.
Philadelphia Tankers, Inc.
Stingray Tanker Corp.
Tanker Transport, Inc.

(2) Names of any corporations in which I own, or did own within 60 days preceding my appointment, any stocks, bonds, or other financial interests:

Atlantic Richfield Co.

(3) Names of any partnerships in which I am associated, or had been associated within 60 days preceding my appointment:

None.

(4) Names of any other businesses which I own, or owned within 60 days preceding my appointment:

None.

ROBERT H. LYNCH.

NOVEMBER 30, 1970.

[FR Doc.71-1352 Filed 2-1-71;8:48 am]

NEWLANDS RECLAMATION PROJECT, NEVADA

Operating Criteria and Procedures; Truckee and Carson Rivers

Pursuant to the requirements of 43 CFR 418.3(a), operating criteria and procedures were published (35 F.R. 5131) for coordinated operation and control of the Truckee and Carson Rivers for service to Newlands Project during the calendar year beginning January 1, 1970.

Notice is hereby given that the same operating criteria and procedures are approved and will be in effect for the calendar year beginning January 1, 1971, and ending December 31, 1971.

This is an interim measure pending receipt and evaluation of a report and recommendations by a special Pyramid Lake Task Force.

FRED J. RUSSELL,
Under Secretary of the Interior.

JANUARY 21, 1971.

[FR Doc.71-1353 Filed 2-1-71;8:49 am]

DEPARTMENT OF AGRICULTURE

Packers and Stockyards Administration

PULASKI STOCKYARD, INC., ET AL.

Notice of Changes in Names of Posted Stockyards

It has been ascertained, and notice is hereby given, that the names of the livestock markets referred to herein, which were posted on the respective dates specified below as being subject to the provisions of the Packers and Stockyards Act, 1921, as amended (7 U.S.C. 181 et seq.), have been changed as indicated below.

Original name of stockyard, location, and date of posting	*Current name of stockyard and date of change in name*
GEORGIA	
Pulaski Stock Yard, Hawkinsville, June 2, 1959	Pulaski Stockyard, Inc., July 1, 1970.
IOWA	
Kimballton Auction Co., Kimballton, May 20, 1959.	Kimballton Auction Company, Jan. 1, 1971.
KENTUCKY	
Pulaski County Livestock Market, Inc., Somerset, Jan. 25, 1966.	Somerset and Pulaski County Livestock Market, Inc., Jan. 1, 1971.
MINNESOTA	
Montevideo Sales Company, Inc., Montevideo, Apr. 19, 1960.	Montevideo Sales Company, Jan. 20, 1971.
NEBRASKA	
Holdrege Commission Company, Holdrege, Aug. 12, 1967.	Holdrege Livestock Commission Company, Jan. 7, 1971.
Twin City Livestock Auction Company, Scottsbluff, November 28, 1938.	Morrison Livestock Auction, Jan. 12, 1971.

Done at Washington, D.C., this 27th day of January 1971.

EDWARD L. THOMPSON,
Acting Chief, Registrations, Bonds, and Reports Branch Livestock Marketing Division.

[FR Doc.71-1378 Filed 2-1-71;8:51 am]

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Office of Education

EDUCATION PROFESSIONS DEVELOPMENT PROGRAM OF TEACHER DEVELOPMENT FOR DESEGREGATING SCHOOLS

Amended Notice of Closing Date for Expression of Interest in 1972 Fiscal Year Program

Notice is hereby given of the establishment of a new closing date for receipt of letters of interest for new projects to be conducted during the fiscal year 1972 under the Teacher Development for Desegregating Schools Program established pursuant to the Education Professions Development Act (20 U.S.C. 1091) as amended.

Assistance made available through the Program of Teacher Development for Desegregating Schools is subject to the Regulation in 45 CFR Part 80 issued by the Secretary of Health, Education, and Welfare, and approved by the President, to effectuate the provisions of section 601 of the Civil Rights Act of 1964 (20 U.S.C. 2000d). Section 601 provides:

> No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

The Education Professions Development Act provides for programs to improve the quality of education and to help meet critical shortages of adequately trained educational personnel. The Teacher Development for Desegregating Schools Program which is supported under the Act was initiated in fiscal year 1970 in order to meet the special needs of educational personnel who serve or will be serving in recently desegregated schools. This program has now been redirected to give special emphasis to projects which improve and enlarge the skills of teachers who have been demoted or displaced incident to the desegregation process. Institutions participating in education professions development programs were advised of this change by letter dated November 23, 1970.

The purpose of this notice is to further advise institutions of higher education that wish to participate in conducting a new project under the Teacher Development for Desegregating Schools Program that in order to be assured that their desire to carry out such a program during the fiscal year 1972 receives consideration, letters of interest must be postmarked within 31 days of the date of the publication of this notice in the FEDERAL REGISTER. The letters should be short and informal. They should indicate the interest and capacity of the applicant to undertake a project. Only institutions of higher education may apply for a grant. However, proposals that indicate that a project will be carried out by a consortium of one or more institutions of higher education, local public educational agencies, and State Departments of Education are encouraged.

Letters of interest should be addressed to and further information may be obtained by writing to the Teacher Development for Desegregating Schools Branch, Bureau of Educational Personnel Development, U.S. Office of Education, Washington, D.C. 20202.

This notice has no application to other programs supported under the Education Professions Development Act. Notice of the closing date for filing letters of interest for these programs appears in the FEDERAL REGISTER for June 25, 1970 (35 F.R. 10396).

Dated: January 8, 1971.

S. P. MARLAND, JR.,
U.S. Commissioner of Education.

Approved: January 28, 1971.

ELLIOT L. RICHARDSON,
Secretary.

[FR Doc.71-1448 Filed 2-1-71;8:50 am]

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

ASSISTANT SECRETARY FOR RENEWAL AND HOUSING MANAGEMENT

Delegation of Authority With Respect to Major-Disaster Relief Functions

SECTION A. *Delegation of authority.* The Assistant Secretary for Renewal and

Housing Management is authorized to direct and to coordinate, within the Department of Housing and Urban Development and with the Office of Emergency Preparedness, major-disaster relief functions assigned to the Department by the Director of the Office of Emergency Preparedness, pursuant to Public Law 81-875 (42 U.S.C. 1855), Public Law 89-769 (42 U.S.C. 1855aa), and Public Law 91-79 (42 U.S.C. 1855aaa); Executive Orders 10427, 10737, and 11495; and regulations of OEP codified in 32 CFR Parts 1709, 1710, and 1715. The Assistant Secretary is authorized to use the personnel and resources of the Department in major-disaster areas in the manner and to the extent directed by the Director of the Office of Emergency Preparedness.

SEC. B. *Authority to redelegate.* The Assistant Secretary is authorized to redelegate to employees of the Department any of the authority delegated to him in section A.

(Sec. 7(d), Department of Housing and Urban Development Act, 42 U.S.C. 3535(d))

Effective date: This delegation of authority is effective August 3, 1970.

GEORGE ROMNEY,
Secretary of Housing and Urban Development.

[FR Doc.71-1379 Filed 2-1-71;8:51 am]

REGIONAL ADMINISTRATORS, AREA DIRECTORS, ET AL.

Designation as Contracting Officer and Redelegation of Authority With Respect to Major-Disaster Relief Functions

SECTION A. *Designation and redelegation.* Each Regional Administrator, Deputy Regional Administrator, Area Director, and Deputy Area Director of the Department of Housing and Urban Development is designated a contracting officer, and is authorized to enter into and administer procurement contracts within major-disaster areas under his jurisdiction and to make related determinations, except determinations under section 302(c) (11), (12), and (13) of the Federal Property and Administrative Services Act (41 U.S.C. 252(c) (11), (12), and (13)), with respect to major-disaster relief functions assigned to the Department by the Director, Office of Emergency Preparedness pursuant to Public Law 81-875 (42 U.S.C. 1855), Public Law 89-769 (42 U.S.C. 1855aa), and Public Law 91-79 (42 U.S.C. 1855aaa); Executive Orders 10427, 10737, and 11495; and OEP regulations codified in 32 CFR Parts 1709, 1710, and 1715.

SEC. B. *Authority to redelegate.* Each Regional Administrator, Deputy Regional Administrator, Area Director, and Deputy Area Director is authorized to redelegate to subordinate employees any of the authority redelegated in section A.

(Secretary's delegation of authority published at 36 F.R. effective Aug. 3, 1970; sec. 7 (d), Department of Housing and Urban Development Act, 42 U.S.C. 3535(d))

Effective date: This document is effective August 3, 1970.

NORMAN V. WATSON,
Acting Assistant Secretary for Renewal and Housing Management.

[FR Doc.71-1380 Filed 2-1-71;8:51 am]

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

[FRA-Petition-No. 17]

LOUISIANA AND NORTH WEST RAILROAD CO.

Petition for Further Hearing and Consideration

Petition of the Louisiana and North West Railroad Co. for further hearing and further consideration of its request for an exemption from the 14 hours-of-service-limitation in Public Law 91-169.

It is hereby determined that the petition of this carrier should be assigned for further hearing and further consideration. Accordingly, it is ordered that it be set for hearing on March 18, 1971, at 9:30 a.m., c.s.t., in conference room at City Hall, East Main Street, Homer, LA.

Issued this 25th day of January 1971 in Washington, D.C.

ROBERT R. BOYD,
Director, Office of Hearings and Proceedings and Hearing Examiner.

[FR Doc.71-1346 Filed 2-1-71;8:48 am]

[FRA-Petition-No. 17]

AMERICAN SHORT LINE RAILROAD ASSOCIATION

Notice of Further Hearing and Further Consideration

Petition of the American Short Line Railroad Association seeking exemption of certain named carriers from the 14 hours-of-service-limitation in Public Law 91-169.

Washington, Idaho & Montana Railway Co., Vermont Railway Inc., Texas Central Railroad, Northampton and Bath Railroad Co., Roscoe, Snyder, and Pacific Railway, and St. Johnsbury & Lamoille County Railroad.

The captioned carriers, by petition filed January 20, 1971, seek further hearing and further consideration of their petition for exemption from the 14 hours-of-service-limitation in Public Law 91-169. The petition indicates that a hearing in Washington, D.C., would be agreeable to the parties. In the circumstances the considered petition, as it pertains to the captioned carriers is hereby set down for further hearing on February 17, 1971 at 9:30 a.m., e.s.t., in conference room 4432, Nassif Building, 400 Seventh Street SW., Washington, DC and for appropriate proceedings thereon.

The petition for further hearing and further consideration, as it pertains to the Washington, Idaho & Montana Railway Co., included further pleadings on behalf of the carrier and suggested that a favorable decision might immediately be made applicable to this carrier based on the additional evidence submitted with the petition of January 20, 1971. The examiner has considered the supplemental statement of this carrier and finds, however, that it is not yet persuasive that the sought relief should be granted. Accordingly, this carrier's petition is embraced in the further hearing to be held February 17, 1971.

Issued this 25th day of January 1971 in Washington, D.C.

ROBERT R. BOYD,
Director, Office of Hearings & Proceedings and Hearing Examiner.

[FR Doc.71-1347 Filed 2-1-71;8:48 am]

[FRA-Petition-No. 22]

RICHMOND, FREDERICKSBURG, AND POTOMAC RAILROAD CO.

Petition for Relief From Requirements

By a letter dated December 15, 1970, which has been received as a petition, the Richmond, Fredericksburg, and Potomac Railroad Co. seeks relief from the requirements of § 232.12(3) of the Rules of Inspection and Test of Air Brakes so as to be permitted to perform an amended air brake test at Richmond, Va., on certain run-through passenger trains operated over its line. More specifically the petitioner seeks the type of relief which has been granted in FRA-Petition-Nos. 1 et al., as first set forth in the decision served October 22, 1970.

The involved trains, when originating at southern terminals on the SCL Railroad, proceed northward to Richmond and over the RF&P Railroad to Washington, D.C., where motive power is changed. This operation is reversed southbound from the time the motive power is placed to the train at Washington, D.C., until it reaches its Florida destination, with 500-mile test and inspection being performed at Hamlet, N.C., and Florence, S.C., in both directions.

The RF&P requests that the following trains which are classified as "run-through" by definition in the October 22, 1970 order, be included in its petition:

58 Silver Meteor (northbound).
57 Silver Meteor (southbound).
22 Silver Star (northbound).
21 Silver Star (southbound).
92 Champion (northbound).
91 Champion (southbound).
2 Florida Special (northbound).
1 Florida Special (southbound).

It is determined that the petition should be, and it is hereby, assigned for oral hearing and for appropriate proceedings thereon. The hearing shall be

held February 26, 1971, at 9:30 a.m., e.s.t., in conference room 4432, Nassif Building, 400 Seventh Street SW., Washington, DC.

Issued this 25th day of January 1971 in Washington, D.C.

ROBERT R. BOYD,
Director, Office of Hearings and Proceedings and hearing Examiner.

[FR Doc.71-1348 Filed 2-1-71;8:48 am]

[FRA-Petition-No. 23]

TEXAS-NEW MEXICO RAILWAY CO.

Petition Seeking Exemption From 14 Hours-of-Service-Limitation

By application filed January 6, 1971, the Texas-New Mexico Railway Co. seeks exemption from the 14 hours-of-service-limitation in Public Law 91-169.

The petitioner asked that it be given a full hearing and it is now determined that the proceeding should be, and it is hereby, set down for oral hearing. The hearing shall be held March 17, 1971 at 9:30 a.m., c.s.t., in conference room 101, Federal Building, 1114 Commerce Street, Dallas, TX, and for appropriate proceedings thereon.

Issued this 25th day of January 1971 in Washington, D.C.

ROBERT R. BOYD,
Director, Office of Hearings & Proceedings and Hearing Examiner.

[FR Doc.71-1349 Filed 2-1-71;8:48 am]

ATOMIC ENERGY COMMISSION

CONSUMERS POWER CO.

Notice of Receipt of Application for Construction Permit and Operating License

Consumers Power Co., 212 West Michigan Avenue, Jackson, Mich., pursuant to the Atomic Energy Act of 1954, as amended, has filed an application, dated January 13, 1969, for permits to construct and licenses to operate two pressurized water nuclear power reactors, designated as the Midland Plant, Units Nos. 1 and 2, at its site on the Tittabawasee River in Midland County, Mich., and adjacent to the Dow Chemical Co.'s main industrial complex in the city of Midland.

Each of the proposed reactors is designed for initial operation at approximately 2,452 thermal megawatts, with a total electrical output of approximately 1,325 megawatts plus 4,050,000 lbs./hr. of process steam.

Any person who wishes to have his views on the antitrust aspects of the application presented to the Attorney General for consideration shall submit such views to the Commission within sixty (60) days after January 12, 1971.

A copy of the application and the amendments thereto are available for public inspection at the Commission's Public Document Room, 1717 H Street NW., Washington, DC, and at the Grace Dow Memorial Library, 1710 West St., Andrews Road, Midland, MI.

Dated at Bethesda, Md., this 31st day of December 1970.

For the Atomic Energy Commission.

FRANK SCHROEDER,
Acting Director, Division of Reactor Licensing.

[FR Doc.71-180 Filed 1-11-71;8:45 am]

[Docket No. 50-322]

LONG ISLAND LIGHTING CO.

Schedule for Hearing

In the matter of Long Island Lighting Co., Shoreham Nuclear Power Station; Docket No. 50-322.

The hearing in the captioned matter will be continued on Tuesday, February 9, 1971, at 10 a.m., local time, in the Holiday Inn, 4089 Nesconset, Port Jefferson Highway, Centerreach, NY 11720. The hearing is scheduled to continue through Friday, February 19, 1971.

The first week of the proceeding will consist of the continued cross-examination of the Regulatory Staff witnesses by the parties followed by redirect examination by the Regulatory Staff.

On Monday, February 15, 1971, Intervenors, Connecticut Action Now, Inc., and Fairfield County Citizens for Environmental Control, Inc., will present their testimony. On Tuesday, February 16, 1971, Intervenors, New York State Atomic Energy Council, and Attorney General, State of New York, will present their testimony. On Wednesday, February 17, 1971, Intervenor, Lloyd Harbor Study Group, will present their testimony.

Two weeks prior to the time of their presentation each party will furnish the Board and the other parties, copies of the testimony which they propose to offer. This proceeding will shortly be observing its first anniversary. The Board notes that all the parties have had more than ample time to prepare their cases and to participate in this proceeding on an orderly basis.

Dated at: Washington, D.C., this 29th day of January 1971.

ATOMIC SAFETY AND LICENSING BOARD,
JAMES R. YORE,
Chairman.

[FR Doc.71-1447 Filed 2-1-71;8:50 am]

CIVIL SERVICE COMMISSION

DEPARTMENT OF COMMERCE

Notice of Grant of Authority To Make a Noncareer Executive Assignment

Under authority of § 9.20 of Civil Service Rule IX (5 CFR 9.20), the Civil Service Commission authorizes the Department of Commerce to fill by noncareer executive assignment in the excepted service the position of Director, Office of Business Research and Analysis, Domestic and International Business, Bureau of Domestic Commerce.

UNITED STATES CIVIL SERVICE COMMISSION,
[SEAL] JAMES C. SPRY,
Executive Assistant to the Commissioners.

[FR Doc.71-1344 Filed 2-1-71;8:48 am]

DEPARTMENT OF DEFENSE

Notice of Grant of Authority To Make Noncareer Executive Assignment

Under authority of § 9.20 of Civil Service Rule IX (5 CFR 9.20), the Civil Service Commission authorizes the Department of Defense to fill by noncareer executive assignment in the excepted service the position of Principal Deputy Assistant Secretary (Systems Analysis), Office of the Secretary of Defense.

UNITED STATES CIVIL SERVICE COMMISSION,
[SEAL] JAMES C. SPRY,
Executive Assistant to the Commissioners.

[FR Doc.71-1345 Filed 2-1-71;8:48 am]

FEDERAL MARITIME COMMISSION

AMERICAN EXPORT ISBRANDTSEN LINES, INC. ET AL.

Notice of Agreement Filed

Notice is hereby given that the following agreement has been filed with the Commission for approval pursuant to section 15 of the Shipping Act, 1916, as amended (39 Stat. 733, 75 Stat. 763, 46 U.S.C. 814).

Interested parties may inspect and obtain a copy of the agreement at the Washington office of the Federal Maritime Commission, 1405 I Street NW., Room 1202; or may inspect the agreement at the Field Offices located at New York, N.Y., New Orleans, La., and San Francisco, Calif. Comments on such agreements, including requests for hearing, may be submitted to the Secretary, Federal Maritime Commission, Washington, D.C. 20573, within 10 days after publication of this notice in the FEDERAL REGISTER. Any person desiring a hearing on the proposed agreement shall provide a clear and concise statement of the matters upon which they desire to adduce evidence. An allegation of discrimination or unfairness shall be accompanied by a statement describing the discrimination or unfairness with particularity. If a violation of the Act or detriment to the commerce of the United States is alleged, the statement shall set forth with particularity the acts and circumstances said to constitute such violation or detriment to commerce.

A copy of any such statement should also be forwarded to the party filing the agreement (as indicated hereinafter)

and the statement should indicate that this has been done.

American Export Isbrandtsen Lines, Inc., Atlantic Container Line, Ltd., Dart Containerline Inc., Hatag-Lloyd Aktiengesellschaft, Sea-Land Service, Inc., Seatrain Lines, Inc., United States Lines, Inc.

Notice of request for an extension of an approved agreement filed by:

Mr. J. Scott Morrison, Vice-President, Traffic Sea-Land Service, Inc., Post Office Box 1050, Elizabeth, NJ 07207.

Agreement No. 9899–1 is a request to extend the approval of the original agreement for an additional 3 months from February 24, 1971. The original agreements permits the parties, all container operators in the North Atlantic trades, to exchange information and to cooperate in developing information concerning intermodal and container operations, practices, and experiences between U.S. Atlantic ports and Atlantic ports of continental Europe, Baltic and Scandinavian ports, Mediterranean ports and ports of the United Kingdom and Eire.

Dated: January 29, 1971.

By order of the Federal Maritime Commission.

FRANCIS C. HURNEY,
Secretary.

[FR Doc.71–1487 Filed 2–1–71;8:50 am]

FEDERAL POWER COMMISSION

[Docket No. G–6061, etc.]

NATIONAL COOPERATIVE REFINERY ASSOCIATION ET AL.

Findings and Order

JANUARY 25, 1971.

Findings and order after statutory hearing issuing certificates of public convenience and necessity, amending orders issuing certificates, permitting and approving abandonment of service, terminating certificates, terminating proceeding, substituting respondent, making successor co-respondent, redesignating proceedings, requiring filing of agreements and undertakings, and accepting related rate schedules and supplements for filing.

Each of the applicants listed herein has filed an application pursuant to section 7 of the Natural Gas Act for a certificate of public convenience and necessity authorizing the sale and delivery of natural gas in interstate commerce or for permission and approval to abandon service or a petition to amend an order issuing a certificate, all as more fully set forth in the applications and petitions, as supplemented and amended.

Applicants have filed related FPC gas rate schedules or supplements thereto and propose to initiate, abandon, or add to natural gas service in interstate commerce as indicated in the tabulation herein. All sales certificated herein are at rates either equal to or below the ceiling prices established by the Commission's statement of general policy No. 61–1, as amended, or involve sales for which permanent certificates have been previously issued; except that initial sales from areas for which area rates have been determined are authorized to be made at or below the applicable area base rates adjusted for quality of the gas, and under the conditions prescribed in the orders determining said rates.

National Cooperative Refinery Association, applicant in Dockets Nos. G–6061 and G–14891, G–9834, G–9833, G–10191, and G–14892, G–10362, and CI 64–294 proposes to continue the sale of natural gas heretofore authorized in said dockets to be made pursuant to United States Smelting Refining and Mining Co. FPC Gas Rate Schedules Nos. 4, 6, 7, 8, 9, and 16, respectively. Said rate schedules will be redesignated as those of applicant and the sales authorized in Dockets Nos. G–14891 and G–14892 will be authorized to be continued pursuant to the certificates issued in Dockets Nos. G–6061 and G–10191, respectively. The present rate under the predecessor's FPC Gas Rate Schedule No. 4 is in effect subject to refund in Docket No. RI64–669 and the present rate under the predecessor's FPC Gas Rate Schedules Nos. 6, 7, 8, and 9 is in effect subject to refund in Docket No. RI64–656. Applicant has filed motions to be made co-respondent in said proceedings and indicates in its certificate applications that it will assume the total refund obligation from the time the predecessor's rates were made effective subject to refund if so required by the Commission. Applicant will be made co-respondent in said proceedings and the proceedings will be redesignated accordingly. Section 154.92(d)(3) of the regulations under the Natural Gas Act provides that an assignee's refund obligation attaches as of the effective date of the order granting its certificate in the absence of a voluntary assumption of a greater obligation. Inasmuch as the predecessor's rate schedules are being accepted for filing as of the effective dates of the transfers of the properties, applicant will be required to file in Dockets Nos. RI64–656 and RI64–669 agreements and undertakings to assure the refunds of only those amounts collected by it, together with interest at the rate of 7 percent per annum, in excess of the amounts determined to be just and reasonable in said proceedings. The predecessor commenced the sale in Docket No. CI64–294 pursuant to a temporary certificate at the rate of 17.7 cents per Mcf at 15.025 p.s.i.a. subject to refund. Inasmuch as the Commission herein finds that an initial rate of 17.7 cents per Mcf is required by the public convenience and necessity, applicant and its predecessor are relieved of any refund obligation in Docket No. CI64–294.

Frank O. Elliott, doing business as Elliott Oil Co. (Operator) et al., applicant in Dockets Nos. G–18742, G–20517, and CI61–388, proposes to continue the sales of natural gas heretofore authorized in said dockets to be made pursuant to Elliott Production Co. FPC Gas Rate Schedules Nos. 3 and 4 and Sunshine Royalty Co. FPC Gas Rate Schedule No. 2, respectively. Said rate schedules will be redesignated as those of applicant. Applicant also proposes to continue the sales authorized in Dockets Nos. CS67–89 and CS67–94 to be made by Sunshine Royalty Co. and Elliott Production Co., respectively. Applicant will be substituted as certificate holder in Docket No. CS67–94 and the small producer certificate issued in Docket No. CS67–89 will be terminated. At the time that the small producer certificate was issued in Docket No. CS67–94, the FPC gas rate schedules of Elliott Production Co., except Nos. 1 and 5, were canceled. FPC Gas Rate Schedules Nos. 1 and 5 were involved in the proceeding on the order to show cause in Docket No. AR61–1, et al. Since refunds of amounts collected under said rate schedules have now been made, it is appropriate that said rate schedules should be canceled at this time. The present rate under Elliott Production Co. FPC Gas Rate Schedule No. 3 is effective subject to refund in Docket No. RI64–567 and an increased rate under Elliott Production Co. FPC Gas Rate Schedule No. 4 is suspended in Docket No. RI64–580. The present rate under Sunshine Royalty Co. FPC Gas Rate Schedule No. 2 is effective subject to refund in Docket No. RI64–568. Therefore, applicant will be made co-respondent in the proceedings pending in Dockets Nos. RI64–567 and RI64–568 and will be substituted in lieu of Elliott Production Co. as respondent in the proceeding pending in Docket No. RI64–580; said proceedings will be redesignated accordingly; and applicant will be required to file agreements and undertakings in Dockets Nos. RI64–567 and RI64–568 to assure the refunds of any amounts collected by him in excess of the amounts determined to be just and reasonable in said proceedings.

Aztec Oil & Gas Co., applicant in Docket No. G–16015, proposes to continue the sale of natural gas heretofore authorized in said docket to be made pursuant to El Paso Products Co. FPC Gas Rate Schedule No. 4. Said rate schedule will be redesignated as that of applicant. The present rate under said rate schedule is in effect subject to refund in Docket No. RI64–460. Applicant is presently a co-respondent in said proceeding and has heretofore filed a general undertaking to assure the refunds of amounts collected in excess of amounts determined to be just and reasonable in proceedings under section 4(e) of the Natural Gas Act.

The Commission's staff has reviewed each application and recommends each action ordered as consistent with all substantive Commission policies and required by the public convenience and necessity.

After due notice by publication in the FEDERAL REGISTER, a notice of intervention by The People of The State of California and The Public Utilities Commission of the State of California was filed in Docket No. CI64–294, in the matter of the application filed on September 3, 1963, in said docket. Said intervention

has been withdrawn. No other petitions to intervene, notices of intervention or protests to the granting of the applications have been filed.

At a hearing held on January 21, 1971, the Commission on its own motion received and made a part of the record in this proceeding all evidence, including the applications and petitions, as supplemented and amended, and exhibits thereto, submitted in support of the authorizations sought herein, and upon consideration of the record.

The Commission finds:

(1) Each applicant herein is a "natural-gas company" within the meaning of the Natural Gas Act as heretofore found by the Commission or will be engaged in the sale of natural gas in interstate commerce for resale for ultimate public consumption, subject to the jurisdiction of the Commission, and will, therefore, be a "natural-gas company" within the meaning of the Natural Gas Act upon the commencement of service under the authorizations hereinafter granted.

(2) The sales of natural gas hereinbefore described, as more fully described in the applications in this proceeding, will be made in interstate commerce subject to the jurisdiction of the Commission; and such sales by applicants, together with the construction and operation of any facilities subject to the jurisdiction of the Commission necessary therefor, are subject to the requirements of subsections (c) and (e) of section 7 of the Natural Gas Act.

(3) Applicants are able and willing properly to do the acts and to perform the service proposed and to conform to the provisions of the Natural Gas Act and the requirements, rules and regulations of the Commission thereunder.

(4) The sales of natural gas by applicants, together with the construction and operation of any facilities subject to the jurisdiction of the Commission necessary therefor, are required by the public convenience and necessity and certificates therefor should be issued as hereinafter ordered.

(5) It is necessary and appropriate in carrying out the provisions of the Natural Gas Act and the public convenience and necessity require that the orders issuing certificates of public convenience and necessity in various dockets involved herein should be amended as hereinafter ordered and conditioned.

(6) It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the sales heretofore authorized in Dockets Nos. G–14891 and G–14892 should be authorized to be continued pursuant to the certificates heretofore issued in Dockets Nos. G–6061 and G–10191, respectively, and that the certificates in Dockets Nos. G–14891 and G–14892 should be terminated.

(7) It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the sale heretofore authorized in Docket No. G–18403 should be authorized to be continued pursuant to the certificate heretofore issued in Docket No. G–18352 and the certificate in Docket No. G–18403 should be terminated.

(8) The sale of natural gas proposed to be abandoned as hereinbefore described and as more fully described in the application and in the tabulation herein is subject to the requirements of subsection (b) of section 7 of the Natural Gas Act.

(9) The abandonment proposed by Applicant herein is permitted by the public convenience and necessity and should be approved as hereinafter ordered.

(10) It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the certificate heretofore issued to applicant relating to the abandonment hereinafter permitted and approved should be terminated.

(11) It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the proceeding pending in Docket No. RI69–25 should be terminated only with respect to sales made pursuant to Mobil Oil Corp. FPC Gas Rate Schedule No. 81.

(12) It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that National Cooperative Refinery Association should be made a co-respondent in the procedings pending in Dockets Nos. RI64–656 and RI64–669, that said proceedings should be redesignated accordingly, and that it should be required to file agreements and undertakings in said proceedings.

(13) It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that Frank O. Elliott, doing business as Elliott Oil Co. (Operator) et al., should be made co-respondent in the proceedings pending in Dockets Nos. RI64–567 and RI64–568 and should be substituted in lieu of Elliott Production Co. as respondent in the proceeding pending in Docket No. RI64–580; that said proceedings should be redesignated accordingly; and that he should be required to file agreements and undertakings in Dockets Nos. RI64–567 and RI64–568.

(14) It is necessary and appropriate in carrying out the provisions of the Natural Gas Act and the public convenience and necessity require that the order issuing a small producer certificate in Docket No. CS67–94 should be amended by substituting Frank O. Elliott, doing business as Elliott Oil Co. (Operator) et al., as certificate holder and by authorizing him to continue thereunder the sales of natural gas heretofore authorized in Docket No. CS67–89.

(15) It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the FPC gas rate schedules and supplements related to the authorizations hereinafter granted should be accepted for filing.

The Commission orders:

(A) Certificates of public convenience and necessity are issued upon the terms and conditions of this order authorizing sales by applicants of natural gas in interstate commerce for resale, together with the construction and operation of any facilities subject to the jurisdiction of the Commission necessary therefor, all as hereinbefore described and as more fully described in the applications and in the tabulation herein.

(B) The certificates granted in paragraph (A) above are not transferable and shall be effective only so long as applicants continue the acts or operations hereby authorized in accordance with the provisions of the Natural Gas Act and the the applicable rules, regulations, and orders of the Commission.

(C) The grant of the certificates issued in paragraph (A) above shall not be construed as a waiver of the requirements of section 4 of the Natural Gas Act or of Part 154 or Part 157 of the Commission's regulations thereunder and is without prejudice to any findings or orders which have been or which may hereafter be made by the Commission in any proceedings now pending or hereafter instituted by or against applicants. Further, our action in this proceeding shall not foreclose nor prejudice any future proceedings or objections relating to the operation of any price or related provisions in the gas purchase contracts herein involved. Nor shall the grant of the certificates aforesaid for service to the particular customers involved imply approval of all of the terms of the contracts, particularly as to the cessation of service upon termination of said contracts as provided by section 7(b) of the Natural Gas Act. The grant of the certificates aforesaid shall not be construed to preclude the imposition of any sanctions pursuant to the provisions of the Natural Gas Act for the unauthorized commencement of any sales of natural gas subject to said certificates.

(D) The certificates issued herein and the amended certificates are subject to the following conditions:

(a) The rates for sales authorized in Dockets Nos. CI68–650, CI71–134, CI71–281, and CI71–333 shall be the applicable area base rates prescribed in Opinion No. 586, as adjusted for quality of gas, or the contract rates, whichever are lower.

(b) Within 90 days from the date of initial delivery applicants in Dockets Nos. CI71–281 and CI71–333 shall file three copies of a rate schedule quality statement in the form prescribed in Opinion No. 586.

(c) If the quality of the gas delivered by applicants in Dockets Nos. CI68–650, CI71–134, CI71–281 and CI71–333 deviates at any time from the quality standards set forth in Opinion No. 586, so as to require a downward adjustment of the existing rates, notices of changes in rates shall be filed pursuant to section 4 of the Natural Gas Act: *Provided, however,* That adjustments reflecting changes in Btu content of the gas shall be computed by the applicable formula and charged without the filing of notices of changes in rates.

(d) In the event that any amounts are collected in excess of the applicable area rates, as adjusted for quality of the gas, applicants in Dockets Nos. CI71–281 and

CI71–333 shall refund to buyers, with interest at the rate of 7 percent per annum, all excess amounts so collected from the date of initial delivery.

(e) The authorizations granted in Dockets Nos. CI68–650 and CI71–281 are conditioned upon any determination which may be made in the proceeding pending in Docket No. R–338 with respect to the transportation of liquefiable hydrocarbons.

(f) The authorizations granted in Dockets Nos. G–18352 and CI67–292 shall be subject to Opinion No. 586.

(g) The rate for the sale authorized in Docket No. CI69–49 shall be 15 cents per Mcf at 14.65 p.s.i.a.

(h) The initial rate for the sale authorized in Docket No. CI71–360 shall be 15 cents per Mcf at 14.65 p.s.i.a. subject to upward B.t.u. adjustment not to exceed 2.2 cents per Mcf.

(i) The sale authorized in Docket No. G–16015 shall be made at a rate of 14.0536 cents per Mcf at 15.025 p.s.i.a. subject to refund in Docket No. RI64–460.

(E) The certificate issued in Docket No. CI71–281 involving the sale of gas by Anadarko Production Co., to its affiliate, Panhandle Eastern Pipe Line Co., determines the rate which legally may be paid by the buyer to the seller, but is without prejudice to any action which the Commission may take in any rate proceeding involving either company.

(F) The orders issuing certificates in Dockets Nos. CI68–650 and CI69–49 are amended by adding thereto authorization to sell natural gas as described in the tabulation herein.

(G) The order issuing a certificate in Docket No. G–18352 is amended to include the sales of natural gas heretofore authorized in Docket No. G–18403 and the certificate heretofore issued in Docket No. G–18403 is terminated.

(H) The orders issuing certificates in Dockets Nos. CI64–62, CI68–1049, and CI70–973 are amended by deleting therefrom authorization to sell natural gas from acreage assigned to Applicants in Dockets Nos. CI71–373, CI71–372, and CI71–371, respectively.

(I) The sales heretofore authorized in Dockets Nos. G–14891 and G–14892 shall be made pursuant to the certificates heretofore issued in Dockets Nos. G–6061 and G–10191, respectively, and the certificates in Dockets Nos. G–14891 and G–14892 are terminated.

(J) The orders issuing certificates in Dockets Nos. G–6061, G–9833, G–9834, G–10191, G–10362, G–16015, G–18742, G–20517, CI61–383, CI67–292, CI67–1155, and CI67–94 are amended to reflect the successors in interest as certificate holders.

(K) Permission for an approval of the abandonment of service by applicant, as hereinbefore described, all as more fully described in the application and in the tabulation herein are granted.

(L) The certificate heretofore issued in Docket No. G–12082 is terminated.

(M) The proceeding pending in Docket No. RI69–25 is terminated only with respect to sales made pursuant to Mobil Oil Corp. FPC Gas Rate Schedule No. 81.

(N) National Cooperative Refinery Association is made a co-respondent in the proceedings pending in Dockets Nos. RI64–656 and RI64–669 and said proceedings are redesignated accordingly. National Cooperative Refinery Association shall comply with the refunding procedure required by the Natural Gas Act and § 154.102 of the regulations thereunder.

(O) Within 30 days from the issuance of this order, National Cooperative Refinery Association shall execute, in the form set out below, and shall file with the Secretary of the Commission acceptable agreements and undertakings in Dockets Nos. RI64–656 and RI64–669 to assure the refunds of any amounts collected by it, together with interest at the rate of 7 percent per annum, in excess of the amounts determined to be just and reasonable in said proceedings. Unless notified to the contrary by the Secretary of the Commission within 30 days from the date of submission, such agreements and undertakings shall be deemed to have been accepted for filing. The agreements and undertakings shall remain in full force and effect until discharged by the Commission.

(P) Frank O. Elliott, doing business as Elliott Oil Co. (Operator) et al., is made a co-respondent in the proceedings pending in Dockets Nos. RI64–567 and RI64–568 and is substituted in lieu of Elliott Production Co. as respondent in the proceeding pending in Docket No. RI64–580; and said proceedings are redesignated accordingly. Frank O. Elliott shall comply with the refunding procedure required by the Natural Gas Act and § 154.102 of the regulations thereunder.

(Q) Within 30 days from the issuance of this order, Frank O. Elliott, doing business as Elliott Oil Co. (Operator) et al., shall execute, in the form set out below, and shall file with the Secretary of the Commission acceptable agreements and undertakings in Dockets Nos. RI64–567 and RI64–568 to assure the refunds of any amounts collected by him, together with interest at the rate of 7 percent per annum, in excess of the amounts determined to be just and reasonable in said proceedings. Unless notified to the contrary by the Secretary of the Commission within thirty days from the date of submission, such agreements and undertakings shall be deemed to have been accepted for filing. The agreements and undertakings shall remain in full force and effect until discharged by the Commission.

(R) The order issuing a small producer certificate of public convenience and necessity to Elliott Production Co. in Docket No. CS67–94 is amended by substituting Frank O. Elliott, doing business as Elliott Oil Co. (Operator) et al., as certificate holder and by authorizing him to continue thereunder the sales of nautral gas heretofore authorized in Docket No. CS67–89; and in all other respects said order shall remain in full force and effect. The small producer certificate issued in Docket No. CS67–89 to Sunshine Royalty Co. is terminated. Elliott Production Co. FPC Gas Rate Schedule Nos. 1 and 5 are canceled.

(S) The rate schedules and rate schedule supplements related to the authorizations granted herein are accepted for filing or are redesignated, all as described in the tabulation herein.

By the Commission.

[SEAL] GORDON M. GRANT, *Secretary.*

Docket No. and date filed	Applicant	Purchaser, field, and location	FPC rate schedule to be accepted		
			Description and date of document	No.	Supp.
G–6061 (G–14891) [1] E 9–18–70	National Cooperative Refinery Association (successor to United States Smelting, Refining, and Mining Co.).	El Paso Natural Gas Co., Blanco Mesa Verde Field, San Juan and Rio Arriba Counties, N. Mex.	United States Smelting Refining and Mining Co., FPC GRS No. 4.	18	.....
			Supplements Nos. 1–3	18	1–3
			Notice of succession 9–15–70		
			Conveyance 1–23–69 [2]	18	4
			Effective date: 1–1–68		
G–9833 E 9–21–70	do	El Paso Natural Gas Co., Ignacio (Pictured Cliffs) Field, La Plata County, Colo.	United States Smelting Refining and Mining Co., FPC GRS No. 7.	20	.....
			Supplements Nos. 1–2	20	1–2
			Notice of succession 9–18–70		
			Conveyance 1–23–69 [2]	20	3
			Effective date: 1–1–68		
G–9834 E 9–21–70	do	El Paso Natural Gas Co., Ignacio (Dakota-Morrison) Field, La Plata County, Colo.	United States Smelting Refining and Mining Co., FPC GRS No. 6.	19	.....
			Supplements Nos. 1–2	19	1–2
			Notice of succession 9–18–70		
			Conveyance 1–23–69 [2]	19	3
			Effective date: 1–1–68		
G–10191 (G–14892) [1] E 9–21–70	do	El Paso Natural Gas Co., Ignacio (Mesa Verde-Dakota) Field, La Plata County, Colo.	United States Smelting Refining and Mining Co., FPC GRS No. 8.	21	.....
			Supplements Nos. 1–18	21	1–18
			Notice of succession 9–18–70		
			Conveyance 1–23–69 [2]	21	19
			Effective date: 1–1–68		

Filing code: A—Initial service.
B—Abandonment.
C—Amendment to add acreage.
D—Amendment to delete acreage.
E—Succession.
F—Partial succession.

See footnotes at end of table.

Docket No. and date filed	Applicant	Purchaser, field, and location	FPC rate schedule to be accepted: Description and date of document	No.	Supp.
G-10362 E 9-21-70	National Cooperative Refinery Association —Continued	El Paso Natural Gas Co., Ignacio (Dakota-Morrison) Field, La Plata County, Colo.	United States Smelting Refining and Mining Co., FPC GRS No. 9.	22	
			Supplement Nos. 1-2	22	1-2
			Notice of succession 9-18-70.		
			Conveyance 1-23-69 [3]	22	3
			Effective date: 1-1-68		
G-16015 E 10-26-70	Aztec Oil & Gas Co. (successor to El Paso Products Co.).	El Paso Natural Gas Co., Basin Dakota Pool, San Juan County, N. Mex.	El Paso Products Co., FPC GRS No. 4.	34	
			Supplement Nos. 1-4	34	1-4
			Notice of succession 10-20-70.		
			Assignment 10-23-69	34	5
			Effective date: 11-1-69		
G-18352 (G-18403) C 9-28-70	Cities Service Oil Co.	Natural Gas Pipeline Co. of America, Smart A Gas Unit, Beaver County, Okla.	Assignment 5-21-70 [4]	129	7
			Supplemental agreement 9-9-70. [5]	129	8
G-18742 E 8-28-70	Frank O. Elliott, d.b.a. Elliott Oil Co. (Operator) et al. (successor to Elliott Production Co.).	El Paso Natural Gas Co., Basin Dakota Field, San Juan County, N. Mex.	Elliott Production Co., FPC GRS No. 3.	1	
			Supplements Nos. 1-2	1	1-2
			Notice of succession 8-24-70.		
			Resolution 7-31-70 [6]	1	3
			Trust agreements 3-23-70. [7]	1	4
			Operating agreement 3-31-70. [8]	1	5
			Effective date: 4-1-70		
G-20517 E 8-28-70	do	El Paso Natural Gas Co., Bisti Lower Gallup Field, San Juan County, N. Mex.	Elliott Production Co., FPC GRS No. 4.	2	
			Supplement No. 1	2	1
			Notice of succession 8-24-70.		
			Resolution 7-31-70. [6]	2	2
			Trust agreements 3-23-70. [7]	2	3
			Effective date: 4-1-70		
CI61-388 E 8-28-70	Frank O. Elliott, d.b.a. Elliott Oil Co. (Operator) et al. (successor to Sunshine Royalty Co.).	El Paso Natural Gas Co., Basin Dakota Field, San Juan County, N. Mex.	Sunshine Royalty Co., FPC GRS No. 2.	3	
			Supplements Nos. 1-2	3	1-2
			Notice of succession 8-24-70.		
			Resolution 7-31-70. [9]	3	3
			Trust agreements 3-23-70. [7]	3	4
			Assignment 3-31-70. [10]	3	5
			Effective date 4-1-70		
CS67-94 E 8-28-70	Frank O. Elliott, d.b.a. Elliott Oil Co. (Operator) et al. (successor to Elliott Production Co.).	Permian Basin			
CI64-294 A 9-3-63 E 9-29-70	National Cooperative Refinery Association (successor to United States Smelting, Refining, and Mining Co.).	El Paso Natural Gas Co., Chinle Wash Field, San Juan County, Utah.	United States Smelting Refining and Mining Company, FPC GRS No. 16.	23	
			Notice of succession 9-26-70		
			Conveyance 1-23-69. [3]	23	1
			Effective date: 1-1-68		
CI67-292 E 10-16-70	Ladd Petroleum Corp. (Operator) et al. (successor to Aikman Bros. Corp. (Operator) et al.).	Northern Natural Gas Co., Mocane-Laverne Field, Beaver County, Okla.	Aikman Bros. Corp. (Operator) et al., FPC GRS No. 1.	24	
			Notice of succession 10-7-70		
			Assignment 9-7-70	24	1
CI67-1155 E 9-29-70	National Cooperative Refinery Association (successor to United States Smelting, Refining, and Mining Co.).	Mountain Fuel Supply Co., North Craig Field, Moffat County, Colo.	United States Smelting Refining and Mining Co., FPC GRS No. 18.	24	
			Supplement No. 1	24	1
			Notice of succession 9-26-70		
			Conveyance 1-23-69 [3]	24	2
			Effective date: 1-1-68		
CI68-650 C 7-30-70	Texas Oil & Gas Corp. (Operator) et al.	Cities Service Gas Co., acreage in Woods and Harper Counties, Okla.	Agreement 6-22-70	52	3
CI69-49 C 9-24-70	John C. Oxley (Operator) et al.	Arkansas Louisiana Gas Co., Kinta Field, Pittsburg County, Okla.	Assignment 7-23-69	3	8
			Letter 10-30-70	3	9
CI71-134 A 8-13-70	Mobil Oil Corp. [11]	Michigan Wisconsin Pipe Line Co., Woodward Area, Dewey County, Okla.	Contract 7-9-70	465	
CI71-281 A 9-25-70	Anadarko Production Co.	Panhandle Eastern Pipe Line Co., Reust A No. 1 Gas Unit, Texas County, Okla.	Contract 7-27-70	154	
CI71-333 A 10-15-70	Pan American Petroleum Corp.	Cities Service Gas Co., West Perrill and Sand Arroya Fields, Stevens and Stanton Counties, Kans.	Contract 9-23-70 [14]	555	
CI71-360 A 10-22-70	Prenalta Corp. [15] (Operator) et al.	Colorado Interstate Gas Co., a division of Colorado Interstate Corp., Point of Rocks Field, Sweetwater County, Wyo.	Contract 9-16-70	6	
CI71-371 (CI70-973) F 10-16-70	Ladd Petroleum Corp. (Operator) et al. (successor to Aikman Bros. Corp.).	Northern Natural Gas Co., Lorena West Field, Texas County, Okla.	Contract 3-2-70 [16]	25	
			Assignment 9-7-70 [17]	25	1
			Assignment 9-7-70 [18]	25	2
CI71-372 (CI68-1049) F 10-16-70	Ladd Petroleum Corp. (successor to Aikman Bros. Corp.).	Northern Natural Gas Co., Larrabee Field, Stevens County, Kans.	Contract 11-1-52 [19]	26	
			Amended 11-27-67	26	1
			Assignment 9-7-70 [20]	26	2
CI71-373 (CI64-62) F 10-16-70	Ladd Petroleum Corp. (successor to Aikman Brothers).	Northern Natural Gas Co., Bechthold Field, Lipscomb County, Tex.	Contract 6-11-63 [21]	27	
			Assignment 9-7-70 [22]	27	1
CI71-407 (G-12082) B 11-12-70	Mobil Oil Corp.	Tennessee Gas Pipeline Co., a division of Tenneco Inc., Donna Field, Hidalgo County, Tex.	Notice of cancellation 11-9-70. [23] [24] [25]	81	11

See footnotes at end of document.

[1] The certificates in Dockets Nos. G-6061 and G-10191 will also be amended to include sales from the additional acreage heretofore authorized in Dockets Nos. G-14891 and G-14892, respectively, and the certificates heretofore issued in the latter dockets will be terminated.

[2] From United States Smelting, Refining, and Mining Co. to applicant (includes all interests presently covered under Smelting FPC GRS Nos. 4 and 8).

[3] From United States Smelting, Refining, and Mining Co. to applicant.

[4] Conveys Skelly Oil Co.'s 25 percent interest in the Smart A Unit to Cities Service Oil Co.; covered under Skelly's FPC GRS No. 148. The interest acquired from Skelly is the total interest covered under Skelly's FPC GRS No. 148, therefore, the certificate heretofore issued to Skelly in Docket No. G-18403 will be terminated.

[5] Places assigned interest under Cities FPC GRS No. 129. Supersedes Skelly's FPC GRS No. 148.

[6] Adopts plan of complete liquidation of Elliott Production Co.

[7] Two similar agreements which establish Trusts of Frank O. Elliott and Edna Ione Hall, sole stockholders of Elliott Production Co. and Sunshine Royalty Co.

[8] Trusts designate Frank O. Elliott, doing business as Elliott Oil Co. as operator of all properties acquired.

[9] Adopts plan of complete liquidation of Sunshine Royalty Co.

[10] From Sunshine Royalty Co. to Elliott and Hall Trusts.

[11] By letters dated Oct. 29, 1970, and Sept. 25, 1970, applicants in Dockets Nos. CI68-650 and CI71-134, respectively, requested permanent certificates at the rate of 20 cents per Mcf, the area ceiling rate prescribed by Opinion No. 586.

[12] Contract rate is 16.015 cents inclusive of tax reimbursement, however, applicant has indicated willingness to accept authorization conditioned to the initial ceiling rate of 15 cents.

[14] Effective date: Date of initial delivery (applicant shall advise the Commission as to such date).

[15] By letter filed Nov. 30, 1970, applicant agreed to accept a permanent certificate containing the conditions imposed by the temporary certificate.

[16] Between Aikman Bros. Corp. and the purchaser; also on file as Aikman Bros. Corp. FPC GRS No. 9.

[17] Conveys certain interests to Joseph Strick et al., subject to a reversionary interest specified therein from Aikman Bros. Corp.

[18] Conveys reversionary interest from Aikman Bros. Corp. to applicant.

[19] Between Northern Natural Gas Producing Co. (Aikman's predecessor in interest) and the purchaser; also on file as Aikman Bros. Corp. FPC GRS No. 2.

[20] Conveys interest from Aikman Bros. Corp. to applicant.

[21] Between Aikman and the purchaser; also on file as Aikman Brothers FPC GRS No. 3.

[22] Conveys interest from Aikman Brothers to applicant.

[23] Source of gas depleted.

[24] Rate of 15.6 cents effective subject to refund in Docket No. RI69-25. Applicant made no deliveries in 1970 and filed to terminate the proceeding in Docket No. RI69-25, therefore, said proceeding will be terminated only with respect to sales made pursuant to applicant's FPC GRS No. 81.

[25] Effective date: Date of this order.

Suggested Agreement and Undertaking:

BEFORE THE FEDERAL POWER COMMISSION

(Name of Respondent: ----------)

Docket No. ------

AGREEMENT AND UNDERTAKING OF (NAME OF RESPONDENT) TO COMPLY WITH REFUNDING AND REPORTING PROVISIONS OF SECTION 154.102 OF THE COMMISSION'S REGULATIONS UNDER THE NATURAL GAS ACT

(Name of respondent) hereby agrees and undertakes to comply with the refunding and reporting provisions of section 154.102 of the Commission's regulations under the Natural Gas Act insofar as they are applicable to the proceeding in Docket No. ------, and has caused this agreement and undertaking to be executed and sealed in its name by a duly authorized officer this ------ day of ---------- 19 ---.

(Name of Respondent)

By ----------

Attest:

[FR Doc.71-1274 Filed 2-1-71;8:45 am]

[Docket No. RI71-631 etc.]

PAN AMERICAN PETROLEUM CORP. ET AL.

Order Providing for Hearings on and Suspension of Proposed Changes in Rates [1]

JANUARY 22, 1971.

The respondents named herein have filed proposed increased rates and charges of currently effective rate schedules for sales of natural gas under Comsion jurisdiction, as set forth in Appendix A hereof.

The proposed changed rates and charges may be unjust, unreasonable, unduly discriminatory, or preferential, or otherwise unlawful.

The Commission finds: It is in the public interest and consistent with the Natural Gas Act that the Commission enter upon hearings regarding the lawfulness of the proposed changes, and that the supplements herein be suspended and their use be deferred as ordered below.

The Commission orders:

(A) Under the Natural Gas Act, particularly sections 4 and 15, the regulations pertaining thereto (18 CFR Ch. I), and the Commission's rules of practice and procedure, public hearings shall be held concerning the lawfulness of the proposed changes.

(B) Pending hearings and decisions thereon, the rate supplements herein are suspended and their use deferred until date shown in the "Date Suspended Until" column, and thereafter until made effective as prescribed by the Natural Gas Act.

(C) Until otherwise ordered by the Commission, neither the suspended supplements, nor the rate schedules sought to be altered, shall be changed until disposition of these proceedings or expiration of the suspension period.

(D) Notices of intervention or petitions to intervene may be filed with the Federal Power Commission, Washington, D.C. 20426, in accordance with the rules of practice and procedure (18 CFR 1.8 and 1.37(f)) on or before March 12, 1971.

By the Commission.

[SEAL] GORDON M. GRANT, *Secretary.*

[1] Does not consolidate for hearing or dispose of the several matters herein.

APPENDIX A

Docket No.	Respondent	Rate schedule No.	Supplement No.	Purchaser and producing area	Amount of annual increase	Date filing tendered	Effective date unless suspended	Date suspended until—	Cents per Mcf* Rate in effect	Cents per Mcf* Proposed increased rate	Rate in effect subject to refund in dockets Nos.
RI71-631	Pan American Petroleum Corp.	120	15	Northern Natural Gas Co. (Eumont, Fields) (Lea County, N. Mex.) (Permian Basin).	$10,228	12-24-70	1-24-71	6-24-71	[1] [3] 13.7598	[1] [3] [4] 15.7543	RI69-558.
RI71-632	George R. Brown et al.	22	2	Texas Eastern Transmission Corp. (North Panther Reef Field, Calhoun County) (Texas RR. District No. 2).	2,557 148	12-28-70	2- 1-71	7- 1-71	[2] [3] 13.2628 15.0656	[2] [3] [4] 15.2574 16.07	RI69-558. RI70-483.
RI71-633	Hydrocarbon Production Co., Inc.	1	[7] 18 19	Transcontinental Gas Pipe Line Corp. (Lacyfield, Hidalgo and Cameron Counties) (Texas RR. District No. 4).	----------	12-28-70	1-28-71	[12] Accepted			
RI71-634	W. L. Pickens et al.	3	2	South Texas Natural Gas Gathering Co. (Penitas Field, Hidalgo County) (Texas RR. District No. 4).	104,093 10,300	12-28-70 12-28-70	1-28-71 1-28-71	6-28-71 6-28-71	[5] [8] [11] 13.0488 [9] [10] 14.0	19.0 [8] [10] 16.06	
RI71-635	Getty Oil Co.	19	26	Transcontinental Gas Pipe Line Corp. (West Bernard Field) (Wharton County) (Texas RR. District No. 3).	72,347	12-28-70	1-28-71	6-28-71	[6] 14.05167	19.0	
RI71-636	Pan American Petroleum Corp.	73	16	Tennessee Gas Pipeline Co., a division of Tenneco, Inc. (Lucky and East Bay City Fields) (Matagorda County) (Texas RR. District No. 3).	19,740 14,760	12-28-70	1-28-71	6-28-71	15.0553 [12] 17.0	22.0 22.0	R170-430.
	-----do-----	83	26	Tennessee Gas Pipeline Co., a division of Tenneco, Inc. (East Bay City Field, (Matagorda County) (Texas RR. District No. 3).	159,432 75,920	12-24-70	1-24-71	6-24-71	15.0 [13] 17.0	22.0 22.0	
		92	21	Transcontinental Gas Pipe Line Corporation (Harris, Coquat & Oakville Fields, Live Oak County) (Texas RR. District No. 2).	[14] 66,473	12-24-70	1-24-71	6-24-71	16.0 [17] [18] 16.0	[14] 21.0 [15] [16] [18] 25.0	

*The pressure base is 14.65 p.s.i.a.

[1] High pressure gas.

[2] Low pressure gas requiring compression for which the rate is reduced by 0.5 cent at 15.025 p.s.i.a.

[3] Converted from 15.025 p.s.i.a. pressure base. Includes partial reimbursement for the full 2.55 percent New Mexico Emergency School Tax.

[4] Increase due to rise in U.S. Department of Labor Industrial Commodities Wholesale Price Index.

[5] Less 1 cent per Mcf for gas compressed by buyer, the facilities to be maintained and operated by seller.

[6] Subject to a reduction of 0.21931 cent for gas dehydrated by buyer.

[7] Agreement dated Nov. 30, 1970. Provides among other things for 19 cents for gas produced from reservoirs discovered prior to Sept. 28, 1960, 21 cents for gas discovered between Sept. 28, 1960 and June 17, 1970, and 25 cents for gas discovered on or after June 17, 1970.

[8] Two-step periodic increase.

[9] Proposed rate of 15 cents suspended in Docket No. RI65-236, but not yet made ESR.

[10] Subject to a 0.25-cent dehydration charge deducted by buyer.

[11] Less 2 cents for gas not requiring compression or which is compressed by buyer.

[12] Accepted, for filing to be effective as of the date shown in the "Effective Date" column.

[13] Price for new reservoir sales as identified in Supplement No. 25.

[14] For gas produced from reservoirs discovered between Sept. 28, 1960 and June 17, 1970.

[15] For gas produced from reservoirs discovered after June 17 1970. Not applicable at present time.

[16] Per amendment on file as Supplement No. 19.

[17] New reservoir price. (Reservoirs discovered after Sept. 28, 1960).

[18] Subject to a 0.21931-cent dehydration charge by buyer.

Hydrocarbon Production Co., Inc., requests an effective date for which adequate notice was not given. Good cause has not been shown for granting such request and it is denied.

All of the producers' proposed increased rates and charges exceed the applicable area price levels for increased rates as set forth in the Commission's statement of general policy No. 61–1, as amended (18 CFR 2.56).

[FR Doc.71–1275 Filed 2–1–71;8:45 am]

[Docket No. RI71–525 etc.]

EDWIN L. COX ET AL.

Order Amending Rate Suspension Orders

JANUARY 25, 1971.

Edwin L. Cox et al., Docket No. RI71–525 et al.; Union Oil Company of California et al., Docket No. RI71–534 et al.

By ordr issued in Dockets Nos. RI71–525 et al., and RI71–534 et al., on December 29, 1970, and December 30, 1970, respectively, we suspended for various periods increased rate filings of the independent producers named therein. Certain of the rate filings exceeded the limits set forth in our order of December 24, 1970, in Docket No. R–394, on increased rate filings in southern Louisiana. We shall therefore amend the orders of December 29 and 30 to conform to the provisions of the order of December 24.

The Commission orders: The orders issued in Dockets Nos. RI71–525 et al., and RI71–534 et al., on December 29, 1970, and December 30, 1970, respectively, are hereby amended in the respects set forth in Appendix A hereof.

By the Commission.

[SEAL] GORDON M. GRANT, *Secretary.*

APPENDIX A

Docket No.	Respondent	Rate schedule No.	Supplement No.	Purchaser and producing area	Amount of annual increase	Date filing tendered	Effective date unless suspended	Date suspended until—	Cents per Mcf*		Rate in effect subject to refund in dockets Nos.
									Rate in effect	Proposed increased rate	
RI71–525..	Edwin L. Cox	77	7	Texas Gas Transmission Corp. (Ramos Field, St. Mary's Parish) (South Louisiana).	$44,250	11–30–70	12–31–70	1–13–71	[2] 19.5	[1] 22.375	
RI71–539..	Coastal States Gas Producing Co.	49	8	United Gas Pipe Line Co. (Hawkins, Hays Unit, Jefferson Davis and Calcasieu Parishes) (South Louisiana).	27,000	12– 4–70	1– 4–71	1–17–71	20.25	[1] 22.375	
RI71–541..	J. C. Trahan Drilling Contractor, Inc.	14	3	Transcontinental Gas Pipe Line Co. (Duson Field, Lafayette Parish, South Louisiana).	14,125	12– 4–70	1– 4–71	1–17–71	20.625	[1] 22.375	
RI71–542..	North Central Oil Corp.	7	7	Transcontinental Gas Pipe Line Corp. (West Kaplan Field, Vermilion Parish) (South Louisiana).	163,350	12– 7–70	1– 7–71	1–20–71	20.625	[1] 22.375	
RI71–544..	Circle Drilling Co., Inc.[3]	1	5	Texas Gas Transmission Corp. (North Rousseau Area) (Lafourche Parish) (South Louisiana).	3,340	12–10–70	1–10–71	1–23–71	20.625	[1] 22.375	
		2	4	do						[1] 22.375	
RI71–547..	Kewanee Oil Co.	84	7	Transcontinental Gas Pipe Line Corp. (Rousseau Field, Lafourche Parish) (South Louisiana).	6,865	12–10–70	1–10–71	1–23–71	20.625	[1] 22.375	
RI71–551..	Cabot Corp. (SW)	51	9	United Gas Pipe Line Co. (St. Martinville Field) (Choplin Unit) (St. Martinville Parish) (Southern Louisiana).	949	12– 4–70	1– 4–71	1–17–71	22.0	[1] 22.375	
		55	5	Southern Natural Gas Co. (Bayou Long Field) (Iberia Parish) (Southern Louisiana).	43,735	12– 4–70	1– 4–71	1–17–71	20.625	[1] 22.375	

*The pressure base is 15.025 p.s.i.a.

[1] Increase is limited to ceiling rate prescribed in the order issued Dec. 24, 1970, in Docket R–394.

[2] Opinion 546 rate. Temporary certificated 20 cents (G–14515) and 20.75 cents (G–14835) rates currently being collected.

[3] Applicant has changed name to Ciroco Exploration, Inc., and has submitted filings to reflect the change in name.

[FR Doc.71–1276 Filed 2–1–71;8:45 am]

[Docket No. CP71–189]

MONTANA-DAKOTA UTILITIES CO.

Notice of Application

JANUARY 27, 1971.

Take notice that on January 22, 1971, Montana-Dakota Utilities Co. (applicant), 400 North Fourth Street, Bismarck, ND 58501, filed in Docket No. CP71–189 an application pursuant to section 7(c) of the Natural Gas Act, as implemented by § 157.7(b) of the regulations under said Act, for a certificate of public convenience and necessity authorizing the construction, during the 12-month period beginning April 1, 1971, and operation of certain natural gas facilities to enable applicant to take into its pipeline system natural gas which will be purchased from producers in the general area of applicant's existing pipeline system, all as more fully set forth in the application which is on file with the Commission and open to public inspection.

Applicant states that the purpose of this "budget-type" application is to augment its ability to act with reasonable dispatch in contracting for and connecting to its pipeline system supplies of natural gas in various producing areas generally coextensive with said system.

The total cost of the facilities proposed herein is not to exceed $600,000 with no single project costing in excess of $150,000.

Any person desiring to be heard or to make any protest with reference to said application should on or before February 18, 1971, file with the Federal Power Commission, Washington, D.C. 20426, a petition to intervene or a protest in accordance with the requirements of the Commission's rules of practice and procedure (18 CFR 1.8 or 1.10) and the regulations under the Natural Gas Act (18 CFR 157.10). All protests filed with the Commission will be considered by it in determining the appropriate action to be taken but will not serve to make the protestants parties to the proceeding. Any person wishing to become a party to a proceeding or to participate as a party in any hearing therein must file a petition to intervene in accordance with the Commission's rules.

Take further notice that, pursuant to the authority contained in and subject to the jurisdiction conferred upon the Federal Power Commission by sections 7 and 15 of the Natural Gas Act and the Commission's rules of practice and procedure, a hearing will be held without further notice before the Commission on this application if no petition to intervene is filed within the time required herein, if the Commission on its own review of the matter finds that a grant of the certificate is required by the public convenience and necessity. If a petition for leave to intervene is timely filed, or if the Commission on its own motion believes that a formal hearing is required, further notice of such hearing will be duly given.

Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for Applicant to appear or be represented at the hearing.

GORDON M. GRANT, *Secretary.*

[FR Doc.71–1325 Filed 2–1–71;8:46 am]

[Docket No. AR61-2 etc.]

AREA RATE PROCEEDING (SOUTHERN LOUISIANA AREA)

Order Establishing Time for Submittal of Rebuttal

JANUARY 26, 1971.

In our order of December 24, 1970 consolidating these proceedings, we established a deadline of February 15, 1971, for the submittal of direct evidence. We did not, however, fix any limit on the period for which rebuttal to that direct testimony should be filed. We now require that all rebuttal testimony which the parties choose to file in response to the above-mentioned direct testimony shall be submitted to the presiding examiner on or before March 3, 1971.

The Commission orders: All rebuttal evidence submitted in this proceeding shall be filed on or before March 3, 1971.

By the Commission.

[SEAL] GORDON M. GRANT, *Secretary.*

[FR Doc.71-1328 Filed 2-1-71;8:46 am]

[Docket No. AR61-2 etc.]

AREA RATE PROCEEDING (SOUTHERN LOUISIANA AREA)

Order Expanding Area Rate Proceeding

JANUARY 26, 1971.

On March 20, 1969, the Commission issued an investigation and proposed rulemaking covering certain sales of natural gas from offshore southern Louisiana. This proceeding was enlarged by order of December 15, 1969, to encompass all vintages of gas produced from the entire southern Louisiana area. Docket No. AR61-2 et al. was reopened on December 24, 1970, and consolidated with AR69-1.

While this area rate proceeding has been in progress there have been and will continue to be rate increase filings suspended under section 4 of the Natural Gas Act and applications for certificates for new sales receiving temporary certificates under section 7 of the Act. This proceeding shall be expanded to apply to all section 4 rate suspension proceedings and all section 7 certificate proceedings which involve sales in the hearing area which have or may be instituted during the pendency of this proceeding.

The Commission finds:

It is necessary and appropriate for purposes of carrying out the provisions of the Natural Gas Act, particularly, but not in limitation of the foregoing, sections 4, 5, 7, 8, 10, 14, 15, and 16 thereof, that all proceedings involving sales of natural gas in the southern Louisiana area be consolidated into this area rate proceeding.

The Commission orders: All rate suspension proceedings under section 4 of the Natural Gas Act and all certificate proceedings under section 7 of the Natural Gas Act which are in the southern Louisiana area and which may arise during the pendency of this proceeding are hereby consolidated into this area rate proceeding.

By the Commission.

[SEAL] GORDON M. GRANT, *Secretary.*

[FR Doc.71-1329 Filed 2-1-71;8:46 am]

[Docket No. AR70-1]

AREA RATE PROCEEDING (PERMIAN BASIN AREA)

Order Setting Prehearing Conference, Further Prescribing Procedures, Clarifying Order Instituting Area Rate Proceeding and Permitting Intervention

JANUARY 26, 1971.

In accordance with our order issued June 17, 1970, in this second Permian Basin Area Proceeding, a prehearing conference for the purpose of developing the issues and prescribing the procedures to be followed here shall be held as hereinafter provided. As a guideline in effecting such purpose the parties and the staff are encouraged (1) to define the issues which will be before the Commission in this proceeding, (2) to state what evidence they desire to submit towards the resolution of such issues and the relevance and materiality of such evidence, (3) to avoid the presentation of any unduly repetitious evidence, (4) to stipulate to all matters which can be resolved without the necessity for a formal presentation and (5), among other matters, to establish procedures which will expedite this hearing.

Our instituting order incorporated by reference into this proceeding all relevant evidence filed in Phase I of the Southern Louisiana Area Rate Proceeding, Docket No. AR69-1, and provided for conducting this proceeding in two separate phases. Much of the evidence presented in Phase I of AR69-1 is equally applicable to conditions in this hearing area. There should be no repetition of this testimony. We also recognize the need for adducement of evidence which, although it may be similar to that presented in AR69-1, will be related primarily to the Permian Basin area. This evidence should include the present and projections for future adequacy of supply to meet present and future demand for natural gas from the area, the effect of the intrastate market on jurisdictional sales, deliverability by the pipelines in the area, composite area cost data of the major respondents, possible use of incentives for dedication of new reserves to the interstate market, arguments for or against the continuation of differential rates based upon gas vintage, and the effect of Commission action upon the structure of the gas producing industry, the availability of capital for exploration and development of new reserves, and the market variables of supply and demand.

Since we intend to consider the justness and reasonableness of rates for all gas presently being produced in the Permian Basin area, there is no longer any need for the hearing to proceed in separate phases. We therefore terminate the phasing requirement of our instituting order.

Experience gained in other area rate proceedings indicates the need for certain relief in the service of documents by the parties as provided in § 1.17 of the Commission's rules of practice and procedure. Accordingly, good cause exists in this proceeding for waiving the provisions of said section 1.17 to the extent that only those parties who desire to receive copies of all pleadings, motions, evidence, briefs, and other documents shall be served by the other parties and such service shall be limited to one representative for each party. For this purpose, a separate service list shall be prepared by the Secretary of the Commission. Those parties desiring to be on the separate service list for the service of the aforementioned materials shall submit the name of the person or official upon whom such service is to be made as hereinafter ordered. All parties to this proceeding, of course, will continue to receive a copy of all Commission orders, notices and other documents issued by the Commission.

In the order instituting this proceeding, it was specifically provided in ordering paragraph (D) that this proceeding shall apply to all section 4 rate suspension matters and section 7 certificate matters in the hearing area arising during the pendency of this proceeding. As a matter of clarification, Docket No. AR70-1 likewise encompasses the setting of just and reasonable rates under section 5 of the Natural Gas Act and such other authorized action as deemed appropriate under the circumstances of this case.

The Commission orders:

(A) A conference will be held on Tuesday, February 23, 1971, in a hearing room of the Federal Power Commission, 441 G Street NW., Washington, DC, commencing at 10 a.m., e.s.t., between the parties to this proceeding, including the Commission staff, concerning the issues and procedures to be followed herein. The Chief Examiner, or an Examiner designated by him, shall preside at this conference. At least 2 weeks prior to the conference, the staff shall serve upon all of the parties who express a desire for separate service a list of data which it deems necessary to meet the requirements of this order, together with a suggested prehearing order incorporating proposed stipulations and schedules.

(B) Any party desiring to be on the separate service list as described above, shall so advise the Secretary of the Commission in writing on or before February 4, 1971.

(C) All petitions to intervene heretofore filed by petitioners as set forth in the appendix are granted.

(D) This proceeding shall no longer be conducted in two separate phases, as directed in ordering paragraph (F) of the instituting order of June 17, 1970, in this proceeding. Evidence material to the issues set forth in this order and the order of June 17, 1970, may be offered irrespective of its relation to the date of contract dedicating the gas.

(E) The Secretary shall cause a copy of this order to be published in the FEDERAL REGISTER and served upon each of the respondents and intervenors in this proceeding and upon interested State Commissions as is provided for in § 1.19 of the Commission's rules of practice and procedure.

By the Commission.

[SEAL] GORDON M. GRANT, *Secretary.*

APPENDIX A

INTERVENORS

Michigan Public Service Commission.
People of the State of California and the Public Utilities Commission of the State of California.
The Public Service Commission of the State of New York.
Iowa State Commerce Commission.
The Public Service Commission of Wisconsin.
The State of Texas.
The Peoples Gas Light and Coke Co.
North Shore Gas Co.
Iowa Public Service Co.
The City of Los Angeles.
Illinois Power Co.
King Resources Co.
Pacific Lighting Service Co., Southern California Gas Co., and Southern Counties Gas Company of California.
Associated Gas Distributors:
- Alabama Gas Corp.
- Atlanta Gas Light Co.
- The Berkshire Gas Co.
- Boston Gas Co.
- Bristol and Warren Gas Co.
- Brockton Taunton Gas Co.
- Buzzards Bay Gas Co.
- Cambridge Gas Co.
- Central Massachusetts Gas Co.
- City of Holyoke, Massachusetts Gas and Electric Department.
- City of Norwich, Department of Public Utilities.
- City of Westfield Gas and Electric Light Department.
- Concord Natural Gas Corp.
- The Connecticut Gas Co.
- Connecticut Natural Gas Corp.
- Fall River Gas Co.
- Fitchburg Gas and Electric Light Co.
- Gas Service, Inc.
- The Greenwich Gas Co.
- The Hartford Electric Light Co.
- Haverhill Gas Co.
- Lawrence Gas Co.
- Lowell Gas Co.
- Lynn Gas Co.
- Manchester Gas Co.
- Mystic Valley Gas Co.
- New Bedford Gas and Edison Light Co.
- The Newport Gas Light Co.
- Northhampton Gas Light Co.
- North Attleboro Gas Co.
- North Shore Gas Co.
- Norwood Gas Co.
- The Pequot Gas Co.
- South County Gas Co.
- Southern Connecticut Gas Co.
- Springfield Gas Light Co.
- Tiverton Gas Co.
- Valley Gas Co.
- Wachusett Gas Co. and Worcester Gas Light Co. (Jointly).
- The Brooklyn Union Gas Co.
- Central Hudson Gas and Electric Corp.
- Consolidated Edison Company of New York, Inc.
- Elizabethtown Gas Co.
- Long Island Lighting Co.
- New Jersey Natural Gas Co.
- New York State Electric & Gas Corp.

Associated Gas Distributors—Continued
- Philadelphia Electric Co.
- Philadelphia Gas Works, Division of UGI Corp.
- Piedmont Natural Gas Co., Inc.
- Public Service Electric & Gas Co.
- Public Service Company of North Carolina.
- Rochester Gas and Electric Corp.
- South Jersey Gas Co.
- UGI Corp.
- Washington Gas Light Co.

American Public Gas Association.
San Diego Gas & Electric Co.
Metropolitan Utilities District of Omaha.
Municipal Distributor Group:
- Memphis Light, Gas and Water Division.
- City of Dyersburg.
- Gibson County Utility District.
- City of Humboldt Board of Public Utilities.
- Jackson Utility of the City of Jackson, Tenn.
- City of Brownsville.
- Town of Covington.
- Tipton County Utility Co., Inc.
- Crockett Utility District of Crockett County, Tenn.
- Bells Utility District of Crockett County, Tenn.

United Distribution Companies:
- American Natural Gas System.
- Central Illinois Light Co.
- Central Illinois Public Service Co.
- Citizens Gas and Coke Utility.
- Columbia Gas System.
- Consolidated Natural Gas System.
- Consumers Power Co.
- The Dayton Power and Light Co.
- Equitable Gas Co.
- Illinois Power Co.
- Michigan Gas Utilities Co.
- Mississippi Valley Gas Co.
- National Fuel Gas System.
- Niagara Mohawk Power Corp.
- Northern Illinois Gas Co.
- Orange & Rockland Utilities, Inc.
- The Peoples Gas System.
- South Carolina Electric & Gas Co.

The Independent Petroleum Association of America.
Independent Natural Gas Association of America.
Pacific Gas & Electric Co.
Northern Illinois Gas Co.
North Central Public Service and Division of Donovan Companies, Inc.
Iowa-Illinois Gas & Electric Co.
Central Telephone & Utilities Corp.
Minneapolis Gas Co.
Northern States Power Co.
Iowa Electric Light & Power Co.
Iowa Power & Light Co.
Cities Service Gas Co.

[FR Doc.71-1330 Filed 2-1-71;8:46 am]

[Docket No. G-10283, etc.]

BRADLEY PRODUCING CORP.

Order Amending Orders Issuing Certificates of Public Convenience and Necessity, Substituting Respondent, Redesignating Proceedings, and Requiring Filing of Agreements and Undertakings

JANUARY 25, 1971.

On August 7, 1970, The Bradley Producing Corp. (petitioner) filed in Docket No. G-10283 et al., a petition to amend the orders issuing certificates of public convenience and necessity in said dockets pursuant to section 7(c) of the Natural Gas Act by substituting petitioner, a Delaware corporation, in lieu of Bradley Resources Corp., formerly The Bradley Producing Corp., a New York corporation, as certificate holder, all as more fully set forth in the petition to amend and in the appendix hereto.

The certificate holder, The Bradley Producing Corp., a New York corporation, changed its name to Bradley Resources Corp., and subsequently conveyed certain producing properties to petitioner. Petitioner proposes to continue without change sales of natural gas in interstate commerce from said properties.

Petitioner will be permitted to continue the sales of natural gas pursuant to the rate schedules of its predecessor presently on file with the Commission. Said rate schedules shall retain their nominal and numerical designations. The present rates under said rate schedules are in effect subject to refund and prior increased rates have been collected subject to refund for locked-in periods. Therefore, Petitioner will be substituted in lieu of The Bradley Producing Corp., a New York corporation, as respondent in said proceedings; the proceedings will be redesignated accordingly; and Petitioner will be required to file agreements and undertakings to assure the refunds of all amounts collected in excess of the amounts determined to be just and reasonable in said proceedings.

The Commission's staff has reviewed the petition to amend and recommends each action ordered as consistent with all substantive Commission policies and required by the public convenience and necessity.

After due notice by publication in the FEDERAL REGISTER, no petitions to intervene, notices of intervention, or protests to the granting of the petition to amend have been received.

The Commission finds:

It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the orders issuing certificates to The Bradley Producing Corp., a New York corporation, should be amended as hereinafter ordered, that petitioner should be substituted in lieu of The Bradley Producing Corp., a New York corporation, as respondent in the latter's rate proceedings, that said proceedings should be redesignated accordingly, and that petitioner should be required to file agreements and undertakings.

The Commission orders:

(A) The orders issuing certificates of public convenience and necessity to The Bradley Producing Corp., a New York corporation, are amended by substituting The Bradley Producing Corp., a Delaware corporation, as certificate holder, all as hereinbefore described and as more fully described in the appendix hereto. In all other respects said orders shall remain in full force and effect.

(B) Petitioner shall continue sales of natural gas pursuant to the FPC gas rate schedules heretofore filed with the Commission by its predecessor in interest, The Bradley Producing Corp., a New York corporation. Said rate schedules

shall retain their nominal and numerical designations.

(C) Petitioner is substituted in lieu of The Bradley Producing Corp., a New York corporation, as respondent in the rate proceedings set forth in the appendix hereto and said proceedings are redesignated accordingly. Applicant shall comply with the refunding procedure required by the Natural Gas Act and § 154.102 of the regulations thereunder.

(D) Within 30 days from the date of this order, petitioner shall execute, in the form set out below, and shall file with the Secretary of the Commission acceptable agreements and undertakings in the rate proceedings set forth in the appendix hereto in which changes in rate have been made effective subject to refund to assure the refund of all amounts collected, together with interest at the rates of 6 or 7 percent per annum as required by the regulations under the Natural Gas Act, in excess of the amounts determined to be just and reasonable in said proceedings. Unless notified to the contrary by the Secretary of the Commission within 30 days from the date of submission, such agreements and undertakings shall be deemed to have been accepted for filing. The agreements and undertakings shall remain in full force and effect until discharged by the Commission.

By the Commission.

[SEAL] GORDON M. GRANT, *Secretary.*

APPENDIX

FPC gas rate schedule No.	Certificate docket No.	Rate docket No.
1	G-10283	G-18109, G-20077, RI60-374, RI61-417, RI62-372, RI63-405, RI64-648, RI65-546, RI70-1602.
2	G-11974	G-17591, G-19612, RI60-323, RI61-375, RI62-372, RI63-405, RI64-648, RI65-546, RI70-1602.
3	G-15384	G-19151, RI70-323, RI61-375, RI62-372, RI63-405, RI64-648, RI65-546, RI70-1602.
4	G-16735	RI64-182, RI71-216.
5	(1)	G-18690.
8	CI62-1367	RI70-1602.
9	CI63-413	RI70-1602.
10	CI63-1411	RI66-230.
11	CI66-9	RI70-1602.

[1] Certificate now held by Mapco Production Co., but The Bradley Producing Corp. is co-respondent in the suspension proceeding in Docket No. G-18690.

Suggested agreement and undertaking:

BEFORE THE FEDERAL POWER COMMISSION

(Name of respondent: _____)

Docket No. _____

AGREEMENT AND UNDERTAKING OF (NAME OF RESPONDENT) TO COMPLY WITH REFUNDING AND REPORTING PROVISIONS OF SECTION 154.102 OF THE COMMISSION'S REGULATIONS UNDER THE NATURAL GAS ACT

(Name of respondent) hereby agrees and undertakes to comply with the refunding and reporting provisions of section 154.102 of the Commission's regulations under the Natural Gas Act insofar as they are applicable to the proceeding in Docket No. _____, and has caused this agreement and undertaking to be executed and sealed in its name by a duly authorized officer this _____ day of _____, 19__.

(Name of Respondent)

By _____

Attest:

_____

[FR Doc.71-1331 Filed 2-1-71;8:46 am]

[Docket No. G-14750, etc.]

HAMILTON BROTHERS PETROLEUM CORP.

Order Amending Orders Issuing Certificates of Public Convenience and Necessity, Redesignating FPC Gas Rate Schedules, Substituting Respondent, Redesignating Proceedings and Requiring Filing of Agreements and Undertakings

JANUARY 25, 1971.

On August 28, 1970, Hamilton Brothers Petroleum Corp. (petitioner) filed in Docket No. G-14750 et al., a petition to amend the orders issuing certificates of public convenience and necessity pursuant to section 7(c) of the Natural Gas Act in said dockets by substituting petitioner in lieu of Frederic C. and Ferris F. Hamilton, doing business as Hamilton Brothers, Ltd., all as more fully set forth in the petition to amend and in the appendix hereto.

Petitioner has acquired the producing properties of Frederic C. and Ferris F. Hamilton, doing business as Hamilton Brothers, Ltd., and proposes to continue without change the sales of natural gas in interstate commerce.

The FPC gas rate schedules of Hamilton Brothers, Ltd., will be redesignated as those of petitioner. The present rates under certain of the rate schedules are in effect subject to refund and in some instances prior increased rates have been collected subject to refund for locked-in periods. Therefore, petitioner will be substituted in lieu of Hamilton Brothers, Ltd., as respondent in each of the latter's rate proceedings; the proceedings will be redesignated accordingly; and petitioner will be required to file agreements and undertakings in said proceedings to assure the refunds by it of all amounts collected in excess of the amounts determined to be just and reasonable in said proceedings.

The Commission's staff has reviewed the petition to amend and recommends each action ordered as consistent with all substantive Commission policies and required by the public convenience and necessity.

After due notice by publication in the FEDERAL REGISTER, no petitions to intervene, notices of intervention, or protests to the granting of the petition to amend have been received.

The Commission finds:

It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the orders issuing certificates to Frederic C. and Ferris F. Hamilton, doing business as Hamilton Brothers, Ltd., should be amended as hereinafter ordered, that the related FPC gas rate schedules should be redesignated, that petitioner should be substituted in lieu of Hamilton Brothers, Ltd., as respondent in the latter's rate proceedings, that said proceedings should be redesignated accordingly, and that petitioner should be required to file agreements and undertakings.

The Commission orders:

(A) The orders issuing certificates of public convenience and necessity to Frederic C. and Ferris F. Hamilton, doing business as Hamilton Brothers, Ltd., are amended by substituting Hamilton Brothers Petroleum Corp. as certificate holder and the related FPC gas rate schedules are redesignated accordingly, all as hereinbefore described and as more fully described in the appendix hereto. In all other respects said orders shall remain in full force and effect.

(B) Petitioner is substituted in lieu of Frederic C. and Ferris F. Hamilton, doing business as Hamilton Brothers, Ltd., as respondent in each of the rate proceedings set forth in the appendix hereto and said proceedings are redesignated accordingly. Petitioner shall comply with the refunding procedure required by the Natural Gas Act and § 154.102 of the regulations thereunder.

(C) Within 30 days from the date of this order, petitioner shall execute, in the form set out below, and shall file with the Secretary of the Commission acceptable agreements and undertakings in the rate proceedings set forth in the appendix hereto in which changes in rate have been made effective subject to refund to assure the refunds of all amounts collected, together with interest at the rate of 7 percent per annum, in excess of the amounts determined to be just and reasonable in said proceedings. Unless notified to the contrary by the Secretary of the Commission within 30 days from the date of submission, such agreements and undertakings shall be deemed to have been accepted for filing. The agreements and undertakings shall remain in full force and effect until discharged by the Commission.

By the Commission.

[SEAL] GORDON M. GRANT, *Secretary.*

APPENDIX

FPC gas rate schedule No.	Certificate docket No.	Rate docket No.
1	G-14750	RI63-422, RI70-1736.
2	G-16206	RI60-464, RI63-207, RI68-224.
4	G-18581	RI62-444, RI67-388, RI68-505.
6	CI60-585	RI67-334, RI71-151.
8	CI61-31	RI67-20, RI68-506
9	CI61-262	RI64-443, RI68-506, RI70-1736.
10	CI61-625	RI66-200.
13	CI61-1458	RI62-323, RI63-165, RI64-284, RI65-301, RI66-133, RI67-107, RI68-145, RI70-1736.
14	CI61-1775	RI67-136, RI68-506.
15	CI62-45	RI67-35, RI68-506.
16	CI62-267	RI67-136, RI68-506.
17	CI62-488	RI67-129, RI67-389, RI68-506.
18	CI62-737	RI64-443, RI68-506, RI70-1736.
19	CI62-1411	RI67-443, RI68-505.
20	CI63-620	
22	CI66-990	RI68-506.
23	G-20565	
24	G-20565	RI68-204, RI69-157.

Suggested agreement and undertaking:

BEFORE THE FEDERAL POWER COMMISSION

(Name of Respondent: _____)

Docket No. _____

AGREEMENT AND UNDERTAKING OF (NAME OF RESPONDENT) TO COMPLY WITH REFUNDING AND REPORTING PROVISIONS OF SECTION 154.102 OF THE COMMISSION'S REGULATIONS UNDER THE NATURAL GAS ACT

(Name of Respondent) hereby agrees and undertakes to comply with the refunding and reporting provisions of section 154.102 of the Commission's regulations under the Natural Gas Act insofar as they are applicable to the proceeding in Docket No. _____, and has caused this agreement and undertaking to be executed and sealed in its name by a duly authorized officer this _____ day of _____, 197__.

(Name of Respondent)

By _____

Attest:

_____

[FR Doc.71-1332 Filed 2-1-71;8:46 am]

SECURITIES AND EXCHANGE COMMISSION

[70-4779]

AMERICAN ELECTRIC POWER CO., INC.

Notice of Fourth Post-Effective Amendment Regarding Issue and Sale of Notes to Banks and to Dealer in Commercial Paper by Holding Company and Capital Contributions to Subsidiary Companies

JANUARY 25, 1971.

Notice is hereby given that American Electric Power Co., Inc. (AEP), 2 Broadway, New York, New York 10004, a registered holding company, has filed a fourth post-effective amendment to its application-declaration in this proceeding pursuant to section 12(b) of the Public Utility Holding Company Act of 1935 (Act) and Rule 45 promulgated thereunder regarding the following proposed transactions. All interested persons are referred to the application-declaration, as now amended, which is summarized below, for a complete statement of the proposed transactions.

By orders dated September 15, 1969, August 10, 1970, and September 21, 1970 (Holding Company Act Releases Nos. 16476, 16803, and 16835), the Commission authorized AEP to issue and sell, from time to time prior to June 30, 1971, short-term notes to banks and commercial paper to a dealer in an aggregate face amount of not more than $130 million to be outstanding at any one time and to make capital contributions to three of its subsidiary companies. AEP has pending presently a third post-effective amendment to its application-declaration stating that it also intends to make one or more cash capital contributions to a fourth subsidiary company, Kentucky Power Co. (Kentucky), on or before June 30, 1971, in an aggregate amount not to exceed $5 million (Holding Company Act Release No. 16958 (Jan. 7, 1971)).

AEP has now filed a fourth post-effective amendment to its application-declaration in which it proposes to increase the cash capital contributions to be made to Ohio Power Co. (Ohio) from $55 million to $90 million. It is stated that Ohio's construction program for 1971 is estimated at more than $150 million.

It is represented that no State commission and no Federal commission, other than this Commission, has jurisdiction over the proposed transactions.

Notice is further given that any interested person may, not later than February 11, 1971, request in writing that a hearing be held on such matter, stating the nature of his interest, the reasons for such request, and the issues of fact or law raised by said fourth post-effective amendment to the application-declaration which he desires to controvert; or he may request that he be notified if the Commission should order a hearing thereon. Any such request should be addressed: Secretary, Securities and Exchange Commission, Washington, D.C. 20549. A copy of such request should be served personally or by mail (airmail if the person being served is located more than 500 miles from the point of mailing) upon the applicant-declarant at the above-stated address, and proof of service (by affidavit or, in case of an attorney at law, by certificate) should be filed with the request. At any time after said date, the application-declaration, as now amended or as it may be further amended, may be granted and permitted to become effective as provided in Rule 23 of the general rules and regulations promulgated under the Act, or the Commission may grant exemption from such rules as provided in Rules 20(a) and 100 thereof or take such other action as it may deem appropriate. Persons who request a hearing or advice as to whether a hearing is ordered will receive notice of further developments in this matter, including the date of the hearing (if ordered) and any postponements thereof.

For the Commission, by the Division of Corporate Regulation, pursuant to delegated authority.

[SEAL] ORVAL L. DUBOIS, *Secretary.*

[FR Doc.71-1323 Filed 2-1-71; 8:46 am]

SMALL BUSINESS ADMINISTRATION

GROWTH BUSINESS FUNDS, INC.

Notice of Issuance of Small Business Investment Company License

On January 5, 1971, a notice was published in the FEDERAL REGISTER (36 F.R. 130) stating that Growth Business Funds, Inc., Home Federal Building, 2100 East Hallandale Beach Boulevard, Hallandale, FL 33009, had filed an application with the Small Business Administration (SBA) pursuant to the Regulations governing small business investment companies (13 CFR Part 107, 33 F.R. 326) for a license to operate as a small business investment company.

Interested parties were given to the close of business January 15, 1971, to submit written comments to SBA. No comments were received.

Notice is hereby given that, having considered the application and all other pertinent information, SBA has issued License No. 05/05-0098 to Growth Business Funds, Inc., pursuant to section 301(c) of the Small Business Investment Act of 1958, as amended.

A. H. SINGER,
Associate Administrator for Investment.

JANUARY 20, 1971.

[FR Doc.71-1324 Filed 2-1-71;8:46 am]

DEPARTMENT OF LABOR

Office of the Secretary

INTERNATIONAL SILVER CO., MERIDEN, CONN.

Notice of Certification of Eligibility of Workers To Apply for Adjustment Assistance

Under date of December 11, 1970, the U.S. Tariff Commission made a report of the results of an investigation (TEA-W-29) under section 301(c)(2) of the Trade Expansion Act of 1962 (76 Stat. 884) in response to a petition for determination of eligibility to apply for adjustment assistance submitted on behalf of the workers of Factory E of the International Silver Co., located in Meriden, Conn. The report contained the Commission's affirmative finding that, as a result in major part of concessions granted under trade agreements, articles like or directly competitive with silver-plated and stainless-steel table holloware produced at Factory E of the International Silver Co. in Meriden, Conn., are being imported into the United States in such increased quantities as to cause, or threaten to cause, unemployment or underemployment of a significant number or proportion of the workers of that plant.

Upon receipt of the Commission's report, the Department's Director of the Office of Foreign Economic Policy, Bureau of International Labor Affairs, instituted an investigation following which he made a recommendation to me relating to the matter of certification (Notice of Delegation of Authority and Notice of Investigations, 34 F.R. 18342; 35 F.R. 19292; 29 CFR Part 90). In that recommendation he noted that the production decline in Factory E became significant in the beginning of 1970, and at the same time employment began to decline steadily. He further reported that this unemployment or underemployment began after January 2, 1970. After due

consideration, I make the following certification:

All hourly and salaried workers of Factory E of the International Silver Co. in Meriden, Conn., who became or will become unemployed or underemployed after January 2, 1970, are eligible to apply for adjustment assistance under title III of the Trade Expansion Act of 1962.

Signed at Washington, D.C., this 25th day of January 1971.

GEORGE H. HILDEBRAND,
Deputy Under Secretary
International Affairs.

[FR Doc.71–1382 Filed 2–1–71;8:51 am]

INTERNATIONAL SILVER CO., MERIDEN AND WALLINGFORD, CONN.

Notice of Certification of Eligibility of Workers To Apply for Adjustment Assistance

Under date of December 11, 1970 the U.S. Tariff Commission made a report of the results of an investigation (TEA–W–30) under section 301(c)(2) of the Trade Expansion Act of 1962 (76 Stat. 884) in response to a petition for determination of eligibility to apply for adjustment assistance submitted on behalf of the workers of Factories C, H, and L of the International Silver Co. located in the Meriden-Wallingford, Conn., area. The report contained the Commission's affirmative finding that, as a result in major part of concessions granted under trade agreements, articles like or directly competitive with the stainless-steel table flatware produced at Factories C, H, and L of the International Silver Co. in the Meriden-Wallingford, Conn., area are being imported into the United States in such increased quantities as to cause, or threaten to cause, unemployment or underemployment of a significant number or proportion of the workers at the said factories.

Upon receipt of the Commission's report, the Department's Director of the Office of Foreign Economic Policy, Bureau of International Labor Affairs, instituted an investigation following which he made a recommendation to me relating to the matter of certification (Notice of Delegation of Authority and Notice of Investigations, 34 F.R. 18342; 35 F.R. 19292; 29 CFR Part 90). In that recommendation he noted that the production of stainless-steel table flatware at Factories C, H, and L, declined substantially between January and September 1970, and employment at those plants fell sharply during the same period. He further reported that this unemployment or underemployment began after January 2, 1970, and that additional layoffs involving production workers and other personnel, including supporting services, clerical and management, are expected after a consolidation of the three plants is accomplished in early 1971. After due consideration, I make the following certification:

All hourly and salaried workers of the International Silver Co. at Factories C and H, Meriden, Conn. and Factory L, Wallingford, Conn., who became or will become unemployed or underemployed after January 2, 1970, are eligible to apply for adjustment assistance under title III of the Trade Expansion Act of 1962.

Signed at Washington, D.C., this 25th day of January 1971.

GEORGE H. HILDEBRAND,
Deputy Under Secretary
International Affairs.

[FR Doc.71–1381 Filed 2–1–71;8:51 am]

FEDERAL REGISTER

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PART II

DEPARTMENT OF LABOR

Bureau of Labor Standards

•

Proposed Safety and Health Regulations for Construction



DEPARTMENT OF LABOR

Bureau of Labor Standards

[29 CFR Part 1518]

SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION

Notice of Proposed Rule Making

Pursuant to section 107 of the Contract Work Hours and Safety Standards Act (86 Stat. 96; 40 U.S.C. 327), commonly known as the Construction Safety Act, it is proposed to amend 29 CFR Chapter XIII by adding thereto a new Part 1518, to read as set forth below.

Interested persons are invited to submit written data, views, or arguments concerning the proposed regulations to the Director of the Bureau of Labor Standards, Workplace Standards Administration, U.S. Department of Labor, 400 First Street NW., Washington, DC 20210, not later than March 2, 1971.

Interested persons are also invited to attend regional informal hearings to be held at the places and at the times indicated below to present orally or in writing data, views, or arguments concerning the proposal before presiding officers to be designated for this purpose.

Each hearing shall be commenced at 10 a.m., local time, at the following places on the indicated dates in 1971:

February 17 and 18.	New York City	Main Post Office Conference Room, 31st and Eighth Ave.
February 22 and 23.	Atlanta	Biltmore Hotel, 817 West Peachtree St. NE.
February 22 and 23.	Chicago	U.S. Army Reserve Facility, 5020 South Cornell Ave.
February 25 and 26.	Dallas	Baker Hotel, Commerce and Akard Sts.
February 25 and 26.	San Francisco.	Bellevue Hotel, 505 Geary St.
March 1 and 2.	Washington	Conference Room, General Accounting Office Bldg., Fourth and G Sts. NW.

Interested persons wishing to appear at any one of the listed hearings should notify in writing the Director of the Bureau of Labor Standards at his address given above. Such notice of intention to appear (original and two copies) should be filed at least 1 week before the first day of the scheduled hearings in which participation is sought, and should indicate the amount of time requested for the presentation. No interested person shall be permitted to testify at more than one hearing.

Each presiding officer at each hearing is empowered to do the following: (1) To regulate the course of the hearing; (2) to rule upon procedural requests, objections, and other procedural matters; (3) in his discretion to call and examine witnesses; (4) to administer oaths and affirmations; and (5) to enforce his decisions relating to the orderly conduct of the proceeding by excluding persons from the hearing room.

The use of prepared statements by witnesses is encouraged. A reporter will be present at each hearing. However, only a report of summarized testimony and procedural matters will be prepared unless the presiding officer in his discretion finds after inviting argument from those participating that a report of summarized testimony will not result in the making of an adequate record of the oral comments to be made, in which case such portions of the proceeding as he may designate will be reported verbatim.

Following the close of each hearing, the presiding officer shall certify the record thereof to the Director of the Bureau of Labor Standards. The Director shall combine the records of the individual hearings, and shall forthwith transmit the combined record to the Advisory Committee on Construction Safety and Health for the rendering of general advice to the Secretary on the proposal and in addition the Director may request the advice of the Advisory Committee on such specific subjects and issues as he may consider appropriate. As soon thereafter as practicable, the Advisory Committee shall convene and render its advice to the Secretary of Labor and transmit the record therewith. The advice of the Advisory Committee shall be public information.

In carrying out its duties under the preceding paragraph, a majority of the members of the Advisory Committee shall constitute a quorum, provided at least one public member, one member representative of contractors, and one member representative of employees are present. Approval by a majority of all members of the Advisory Committee is encouraged for rendering advice and making recommendations. However, a failure to marshal a majority of all members of the Advisory Committee shall not be reason for delaying the giving of advice to the Secretary. The Secretary shall be informed of any concurring or dissenting views. If the advice of the Advisory Committee is not forthcoming within a reasonable time, the Secretary of Labor shall direct the immediate return of the record so that action upon the proposal may be promptly concluded.

For a general description of the composition and functions of the Advisory Committee, see Secretary of Labor's Order No. 14–70, published in the FEDERAL REGISTER on July 15, 1970 (35 F.R. 11320).

The proposed Part 1518 reads as set forth below.

Signed at Washington, D.C., this 15th day of January 1971.

J. D. HODGSON,
Secretary of Labor.

PART 1518—SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION

Subpart A—General

Sec.
1518.1 Purpose and scope.
1518.2 Variations from safety and health standards.
1518.3 Inspections—right of entry.
1518.4 Rules of practice for administrative adjudications for enforcement of safety and health standards.

Subpart B—General Interpretations

1518.10 Scope of subpart.
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Subpart C—General Safety and Health Provisions

1518.20 General safety and health provisions.
1518.21 Safety training and education.
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1518.24 Fire protection and prevention.
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1518.27 Sanitation.
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1518.50 Medical services and first aid.
1518.51 Sanitation.
1518.52 Occupational noise exposure.
1518.53 Ionizing radiation.
1518.54 Nonionizing radiation.
1518.55 Gases, vapors, fumes, dusts, and mists.
1518.56 Illumination.
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Subpart E—Personal Protective and Life Saving Equipment

1518.100 Head protection.
1518.101 Hearing protection.
1518.102 Eye and face protection.
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1518.104 Safety belts, lifelines, and lanyards.
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1518.150 Definitions.
1518.151 Fire protection.
1518.152 Fire prevention.
1518.153 Flammable and combustible liquids.
1518.154 Liquefied petroleum gas (LP-Gas).
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Subpart G—Signs, Signals, and Barricades

1518.200 Accident prevention signs and tags.
1518.201 Signaling.
1518.202 Barricades.

Subpart H—Materials Handling, Storage, Use, and Disposal

1518.250 General requirements for storage.
1518.251 Rigging equipment for material handling.
1518.252 Disposal of waste materials.

Subpart I—Tools—Hand and Power

1518.300 General requirements.
1518.301 Hand tools.
1518.302 Power operated hand tools.
1518.303 Abrasive wheels and tools.
1518.304 Woodworking tools.
1518.305 Jacks—lever and ratchet, screw and hydraulic.

Subpart J—Welding and Cutting

1518.350 Ventilation and protection in welding, cutting, and heating.
1518.351 Fire prevention.

Sec.
1518.352 Welding, cutting and heating in way of preservative coatings.
1518.353 Gas welding and cutting.
1518.354 Arc welding and cutting.

Subpart K—Electrical

1518.400 General requirements.
1518.401 Grounding and bonding.
1518.402 Equipment installation and maintenance.
1518.403 Battery rooms and battery charging.
1518.404 Hazardous locations.
1518.405 Definitions.

Subpart L—Ladders and Scaffolding

1518.450 Ladders.
1518.451 Scaffolding.
1518.452 Definitions.

Subpart M—Floor and Wall Openings, and Stairways

1518.500 Guardrails, handrails, and covers.
1518.501 Stairways.
1518.502 Definitions.

Subpart N—Cranes, Derricks, Hoists, Elevators, and Conveyors

1518.550 Cranes and derricks.
1518.551 Helicopters.
1518.552 Material hoists and personnel elevators.
1518.553 Base-mounted drums hoists.
1518.554 Overhead hoists.
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Subpart O—Motor Vehicles, Mechanized Equipment, and Marine Operations

1518.600 Equipment.
1518.601 Motor vehicles.
1518.602 Material handling equipment.
1518.603 Pile driving equipment.
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Subpart P—Excavations, Trenching, and Shoring

1518.650 General requirements.
1518.651 Specific excavation requirements.
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Subpart Q—Concrete Forms and Shoring

1518.700 General provisions.
1518.701 Vertical shoring.

Subpart R—Steel Erection

1518.750 Flooring requirements.
1518.751 Structural steel assembly.
1518.752 Bolting, riveting, fitting-up, and plumbing-up.

Subpart S—Tunnels and Shafts, Caissons, Cofferdams, and Compressed Air

1518.200 Tunnels and shafts.
1518.801 Caissons.
1518.802 Cofferdams.
1518.803 Compressed air.
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Subpart T—Demolition

1518.850 Preparatory operations.
1518.851 Stairs, passageways, and ladders.
1518.852 Chutes.
1518.853 Removal of materials through floor holes.
1518.854 Removal of walls, masonry sections, and chimneys.
1518.855 Manual removal of floors.
1518.856 Removal of walls, floors, and material with equipment.
1518.857 Storage.
1518.858 Removal of steel construction.
1518.859 Mechanical demolition.

Subpart U—Blasting and Use of Explosives

1518.900 General provisions.
1518.901 Blaster qualifications.
Sec.
1518.902 Surface transportation of explosives.
1518.903 Underground transportation of explosives.
1518.904 Storage of explosives and blasting agents.
1518.905 Storage within magazines.
1518.906 Loading of explosives or blasting agents.
1518.907 Initiation of explosive charges.
1518.908 Use of safety fuse.
1518.909 Use of detonating cord.
1518.910 Firing the blast.
1518.911 Inspection after blasting.
1518.912 Misfires.
1518.913 Underwater blasting.
1518.914 Blasting in excavations under compressed air.
1518.915 Definitions.

Subpart V—Power Distribution and Transmission Lines

1518.950 Power distribution lines.
1518.951 Transmission lines.

Subpart W—Recording and Reporting Work Injury Frequency and Severity Data and Accident Costs

1518.1000 Definitions for purpose of this part.
1518.1001 Records.
1518.1002 Injury reports required.
1518.1003 Schedule of time charges.

AUTHORITY: The provisions of this Part 1518 issued under sec. 1, 83 Stat. 96, 97, adding sec. 107 to Public Law 87-581, 76 Stat. 357; 40 U.S.C. 327.

Subpart A—General

§ 1518.1 Purpose and scope.

(a) This part sets forth the safety and health standards promulgated by the Secretary of Labor under section 107 of the Contract Work Hours and Safety Standards Act. The standards are published in Subpart C of this part and following subparts.

(b) Subpart B of this part contains statements of general policy and interpretations of section 107 of the Contract Work Hours and Safety Standards Act having general applicability.

§ 1518.2 Variations from safety and health standards.

(a) In case of substantial engineering or other practical difficulties, a contractor or subcontractor may request a variation from any of the safety and health standards published in Subpart C of this part and following subparts.

(b) Any contractor or subcontractor desiring a variation shall file with the Director of the Bureau of Labor Standards a written application in triplicate containing the following:

(1) The name and address of the applicant;

(2) A reference to the applicable standard, including the applicable provisions of this part;

(3) A full description of the proposed variation from the standard;

(4) A statement of how the variation would provide for protecting the surroundings or working conditions of the laborers or mechanics sought to be protected by the standard; and

(5) A statement of the substantial engineering or other practical difficulties which are asserted.

(c) The Director may require the applicant to furnish additional information.

(d) If the Director finds that the variation will not prejudice the safety or health of the laborers or mechanics sought to be protected by the standard, he shall grant the variation with such modifications, restrictions, or qualifications as he may consider to be necessary or appropriate.

(e) The terms and conditions of the variation may be modified at the discretion of the Director or upon application of the contractor or subcontractor or other interested person.

(f) The Director may cancel the variation for cause.

(g) Notice of the granting or cancellation of a variation shall be published in the FEDERAL REGISTER.

§ 1518.3 Inspections—right of entry.

(a) It shall be a condition of each contract which is subject to section 107 of the Contract Work Hours and Safety Standards Act that the Secretary of Labor or any authorized representative shall have a right of entry to any site of contract performance for the following purposes:

(1) To inspect or investigate the matter of compliance with the safety and health standards contained in Subpart C of this part and following subparts; and

(2) To carry out the duties of the Secretary under section 107(f) of the Act.

(b) For the purpose of carrying out his investigative duties under the Act, the Secretary of Labor may, by agreement, use with or without reimbursement the services, personnel, and facilities of any State or Federal agency. Any agreements with States under this section shall be similar to those provided for under the Walsh-Healey Public Contracts Act under 41 CFR Part 50-205.

§ 1518.4 Rules of practice for administrative adjudications for enforcement of safety and health standards.

(a) The rules of practice for administrative adjudications for the enforcement of the safety and health standards contained in Subpart C of this part and the following subparts shall be the same as those published in Part 6 of this title with respect to safety and health violations of the Service Contract Act of 1965 (69 Stat. 1035), except as provided in paragraph (b) of this section.

(b) In the case of debarment, the findings required by section 107(d) of the Act shall be made by the hearing examiner or the Director, as the case may be. Whenever, as provided in section 107(d)(2), a contractor requests termination of debarment before the end of the 3-year period prescribed in that section, the request shall be filed in writing with the Director who shall publish a notice in the FEDERAL REGISTER that the request has been received and afford interested persons an opportunity to be heard upon the request, and thereafter the provisions of Part 6 of this title shall apply with respect to prehearing conferences,

hearings and related matters, and decisions and orders.

Subpart B—General Interpretations

§ 1518.10 Scope of subpart.

(a) This subpart contains the general rules of the Secretary of Labor interpreting and applying the construction safety and health provisions of section 107 of the Contract Work Hours and Safety Standards Act (83 Stat. 96). Section 107 requires as a condition of each contract which is entered into under legislation subject to Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267), and which is for construction, alteration, and/or repair, including painting and decorating, that no contractor or subcontractor contracting for any part of the contract work shall require any laborer or mechanic employed in the performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety, as determined under construction safety and health standards promulgated by the Secretary by regulation.

§ 1518.11 Coverage under section 103 of the act distinguished.

(a) *Coverage under section 103.* It is important to note that the coverage of section 107 differs from that for the overtime requirements of the Contract Work Hours and Safety Standards Act. The application of the overtime requirements is governed by section 103, which, subject to specific exemptions, includes (1) Federal contracts requiring or involving the employment of laborers or mechanics (thus including, but not limited to, contracts for construction), and (2) contracts assisted in whole or in part by Federal loans, grants, or guarantees under any statute "providing wage standards for such work." The statutes "providing wage standards for such work" include statutes for construction which require the payment of minimum wages in accordance with prevailing wage findings by the Secretary of Labor in accordance with the Davis-Bacon Act. A provision to section 103 excludes from the overtime requirements work where the Federal assistance is only in the form of a loan guarantee or insurance.

(b) *Coverage under section 107.* To be covered by section 107 of the Contract Work Hours and Safety Standards Act, a contract must be one which (1) is entered into under a statute that is subject to Reorganization Plan No. 14 of 1950 (64 Stat. 1267); and (2) is for "construction, alteration, and/or repair, including painting and decorating."

§ 1518.12 Reorganization Plan No. 14 of 1950.

(a) *General provisions.* Reorganization Plan No. 14 of 1950 relates to the prescribing by the Secretary of Labor of "appropriate standards, regulations, and procedures" with respect to the enforcement of labor standards under Federal and federally assisted contracts which are subject to various statutes subject to the Plan. The rules of the Secretary of Labor implementing the Plan are published in Part 5 of this title. Briefly, the statutes subject to the Plan include the Davis-Bacon Act, including its extension to Federal-aid highway legislation subject to 23 U.S.C. 113, and other statutes subject to the Plan by its original terms, statutes by which the Plan is expressly applied, such as the Contract Work Hours Standards Act by virtue of section 104(d) thereof.

(b) *The Plan.* (1) The statutes subject to Reorganization Plan No. 14 of 1950 are cited and briefly described in the remaining subparagraphs of this paragraph. These descriptions are general in nature and not intended to convey the full scope of the work to be performed under each statute. The individual statutes should be resorted to for a more detailed scope of the work.

(2) *Federal-Aid Highway Acts.* The provisions codified in 23 U.S.C. 113 apply to the initial construction, reconstruction, or improvement work performed by contractors or subcontractors on highway projects on the Federal-aid systems, the primary and secondary, as well as their extensions in urban areas, and the Interstate System, authorized under the highway laws providing for the expenditure of Federal funds upon the Federal-aid system. As cited in 41 Op. A.G. 488, 496, the Attorney General ruled that the Federal-Aid Highway Acts are subject to Reorganization Plan No. 14 of 1950.

(3) *National Housing Act (12 U.S.C. 1713, 1715a, 1715e, 1715k, 1715l(d) (3) and (4), 1715v, 1715w, 1715x, 1743, 1747, 1748, 1748h–2, 1750g, 1715l(h)(1), 1715z(j)(1), 1715z–1, 1715y(d), Subchapter 1x–A and 1x–B, 1715z–7).* This act covers construction which is financed with assistance by the Federal Government through programs of loan and mortgage insurance for the following purposes:

(i) Rental Housing—Section 1713 provides mortgage and insurance on rental housing of eight or more units and on mobile-home courts.

(ii) Section 1715a—Repealed.

(iii) Cooperative Housing—Section 1715e authorizes mortgage insurance on cooperative housing of five or more units as well as supplementary loans for improvement of repair or resale of memberships.

(iv) Urban Renewal Housing—Section 1715k provides mortgage insurance on single family or multifamily housing in approved urban renewal areas.

(v) Low or Moderate Income Housing—Section 1715L(d) (3) and (4) insures mortgages on low-cost single family or multifamily housing.

(vi) Housing for Elderly—Section 1715v provides mortgage insurance on rental housing for elderly or handicapped persons.

(vii) Nursing Homes—Section 1715w authorizes mortgage insurance on nursing home facilities and major equipment.

(viii) Experimental Housing—Section 1715x provides mortgage insurance on single family or multifamily housing with experimental design of materials.

(ix) War Housing Insurance—Section 1743 not active.

(x) Yield Insurance—Section 1747 insures investment returns on multifamily housing.

(xi) Armed Services Housing—Section 1748b to assist in relieving acute shortage and urgent need for family housing at or in areas adjacent to military installations.

(xii) Defense Housing for Impacted Areas—Section 1748h–2 provides mortgage insurance on single family or multifamily housing for sale or rent primarily to military or civilian personnel of the Armed Services, National Aeronautics and Space Administration, or Atomic Energy Commission.

(xiii) Defense Rental Housing—Section 1750g provides for mortgage insurance in critical defense housing areas.

(xiv) Rehabilitation—Section 1715L(h)(1) provides mortgage insurance for nonprofit organizations to finance the purchase and rehabilitation of deteriorating or substandard housing for subsequent resale to low-income home purchasers. There must be located on the property five or more single family dwellings of detached, semidetached, or row construction.

(xv) Homeowner Assistance—Section 1715Z(j)(1) authorizes mortgage insurance to nonprofit organizations or public bodies or agencies executed to finance sale of individual dwellings to lower income individuals or families. Also includes the rehabilitation of such housing if it is deteriorating or substandard for subsequent resale to lower income home purchasers.

(xvi) Rental Housing Assistance—Section 1715Z–1 authorizes mortgage insurance and interest reduction payments on behalf of owners of rental housing projects designed for occupancy by lower income families. Payments are also authorized for certain State or locally aided projects.

(xvii) Condominium Housing—Section 1715y(d) provides mortgage insurance on property purchased for the development of building sites. This includes waterlines and water supply installations, sewer lines and sewage disposal installations, steam, gas, and electrical lines and installations, roads, streets, curbs, gutters, sidewalks, storm drainage facilities, and other installation or work.

(xviii) Group Medical Practice Facilities—Subchapter LX–B authorizes mortgage insurance for the financing of construction and equipment, of facilities for group practice of medicine, optometry, or dentistry.

(xix) Nonprofit Hospitals—1715z–7 authorizes mortgage insurance to cover new and rehabilitated hospitals, including initial equipment.

(4) *Hospital Survey and Construction Act, as amended by the Hospital and Medical Facilities Amendments of 1964 (42 U.S.C. 291e).* The provisions of this Act cover construction contracts made by State or local authorities or private institutions under Federal grant-in-aid programs for the construction of hospitals and other medical facilities.

(5) *Federal Airport Act (49 U.S.C. 1114(b)).* The act provides grant-in-aid

funds for airport construction limited to general site preparation runways, taxiways, aprons, lighting appurtenant thereto, and fire, rescue, and maintenance buildings. The act excludes construction intended for use as a public parking facility for passenger automobiles and the cost of construction of any part of an airport building except such of those buildings or parts of buildings to house facilities or activities directly related to the safety of persons at the airport.

(6) *Housing Act of 1949 (42 U.S.C. 1459)*. Construction contracts awarded by local authorities financed with the assistance of loans and grants from the Federal Government. The construction programs are for slum clearance and urban renewal which includes rehabilitation grants, neighborhood development programs, neighborhood renewal plans, community renewal, demolition projects, and assistance for blighted areas. See the Housing Act of 1964, No. 21 below, concerning financial assistance for low-rent housing for domestic farm labor.

(7) *School Survey and Construction Act of 1950 (20 U.S.C. 636)*. This act provides for a Federal grant-in-aid program to assist in the construction of schools in federally affected areas.

(8) *Defense Housing & Community Facilities & Services Act of 1951 (42 U.S.C. 1592i)*. Inactive Program.

(9) *United States Housing Act of 1937 (42 U.S.C. 1416)*. This statute covers the construction of low-rent public housing and slum clearance projects awarded by local authorities. These projects are financed with the assistance of loans and grants from the Federal Government. The slum clearance is the demolition and removal of buildings from any slum area to be used for a low-rent housing project.

(10) *Federal Civil Defense Act of 1950 (50 U.S.C. App. 2281)*. This act provides for Federal assistance to the several States and their political subdivisions in the field of civil defense which includes procurement, construction, leasing, or renovating of materials and facilities.

(11) *Delaware River Basin Compact (sec. 15.1, 75 Stat. 714)*. This joint resolution creates, by intergovernmental compact between the United States, Delaware, New Jersey, New York, and Pennsylvania, a regional agency for planning, conservation, utilization, development, management and control of the water and related sources of the Delaware River.

(12) *Cooperative Research Act (20 U.S.C. 332a(c))*. This act provides Federal grants to a university, college, or other appropriate public or nonprofit private agency or institution for part or all of the cost of constructing a facility for research or for research and related purposes. Research and related purposes means research, research training, surveys, or demonstrations in the field of education, or the dissemination of information derived therefrom, or all of such activities, including (but without limitation) experimental schools, except that such term does not include research, research training, surveys, or demonstrations in the field of sectarian instruction or the dissemination of information derived therefrom. Construction includes new buildings, and the acquisition, expansion, remodeling, replacement, and alteration of existing buildings and the equipping of new buildings and existing buildings.

(13) *Health Professions Educational Assistance Act of 1963 (42 U.S.C. 292d (c)(4), 293a(c)(5))*. The provisions of this act provide for grants to assist public and nonprofit medical, dental, and similar schools for the construction, expansion, or renovation of teaching facilities.

(14) *Mental Retardation Facilities Construction Act (42 U.S.C. 295(a)(2)(D), 2662(5), 2675(a)(5))*. This act authorizes Federal financial assistance in the construction of centers for research on mental retardation and related aspects of human development, of university-affiliated facilities for the mentally retarded and of facilities for the mentally retarded.

(15) *Community Mental Health Centers Act (42 U.S.C. 2685(a)(5))*. This act authorizes Federal grants for the construction of public and other nonprofit community mental health centers.

(16) *Higher Education Facilities Act of 1963 (20 U.S.C. 753)*. This act authorizes the grant or loan of Federal funds to assist public and other nonprofit institutions of higher education in financing the construction, rehabilitation, or improvement of academic and related facilities in undergraduate and graduate schools.

(17) *Vocational Educational Act of 1963 (20 U.S.C. 35f)*. This act provides for Federal grants to the various States for construction of area vocational education school facilities.

(18) *Library Services and Construction Act (20 U.S.C. 355e(a)(4))*. This act provides for Federal assistance to the various States for the construction of public libraries.

(19) *Urban Mass Transportation Act of 1954 (49 U.S.C. 1609)*. This act provides for grants and loans to assist States and local public bodies and agencies thereof in financing the acquisition, construction, reconstruction, and improvement of facilities and equipment for use, by operation or lease or otherwise, in mass transportation service in urban area and in coordinating such service with highway and other transportation in such areas.

(20) *Economic Opportunity Act of 1964 (42 U.S.C. 2947)*. This act covers construction which is financed with assistance of the Federal Government for the following purposes:

(i) Authorizes Federal assistance for construction of projects, buildings and works which will provide young men and women in rural and urban residential centers with education, vocational training, and useful work experience (Title I).

(ii) Authorizes financial assistance for construction work planned and carried out at the community level for anti-poverty programs (Title II):

(*a*) Authorizes loans to low income rural families by assisting them to acquire or improve real estate or reduce encumbrances or erect improvements thereon, and to participate in cooperative associations and/or to finance nonagricultural enterprises which will enable such families to supplement their income (Title III);

(*b*) Authorizes loans to local cooperative associations furnishing essential processing, purchasing, or marketing services, supplies, or facilities predominantly to low-income rural families (Title III);

(*c*) Authorizes financial assistance to States, political subdivisions of States, public and nonprofit agencies, institutions, organizations, farm associations, or individuals in establishing housing, sanitation, education, and child day-care programs for immigrants and other seasonally employed agricultural employees and their families (Title III).

(iii) Authorizes loans or guarantees loans to small businesses for construction work (Title IV).

(iv) Authorizes the payment of the cost of experimental, pilot, or demonstration projects to foster State programs providing construction work experience or training for unemployed fathers and needy people (Title V).

(21) *Housing Act of 1964 (42 U.S.C. 1486(f); 42 U.S.C. 1452b(e))*. Provides financial assistance for low-rent housing for domestic farm labor. The Act further provides for loans, through public or private agencies, where feasible, to owners or tenants of property in urban renewal areas to finance rehabilitation required to conform the property to applicable code requirements or carry out the objectives of the urban renewal plan for the area.

(22) *The Commercial Fisheries Research and Development Act of 1964 (16 U.S.C. 779e(b))*. This act authorizes financial assistance to State agencies for construction projects designed for the research and development of the commercial fisheries resources of the Nation.

(23) *The Nurse Training Act of 1964 (42 U.S.C. 296a(b)(5))*. This act provides for grants to assist in the construction of new facilities for collegiate, associate degree, and diploma schools of nursing, or replacement or rehabilitation of existing facilities of such schools.

(24) *Elementary and Secondary Education Act of 1965 (20 U.S.C. 241i, 848)*. The purpose of the act is to provide financial assistance to local educational agencies serving areas with concentrations of children from low income families for construction in connection with the expansion or improvement of their educational programs.

(25) *Federal Water Pollution Control Act, as amended by the Water Quality Act of 1965 (3 U.S.C. 466e(g))*. Provides for financial assistance to States or municipalities for construction of facilities in connection with the prevention and control of water pollution. This includes projects that will control the discharge into any waters of untreated or inadequately treated sewage.

(26) *Appalachian Regional Development Act of 1965 (40 U.S.C. App. 402)*.

Authorizes Federal assistance in the construction of an Appalachian development highway system; construction of multicounty demonstration health facilities, hospitals, regional health, diagnostic and treatment centers, and other facilities for health; seal and fill voids in abandoned mines and to rehabilitate strip mine areas; construction of school facilities for vocational education; and to assist in construction of sewage treatment works.

(27) *National Technical Institute for the Deaf Act (20 U.S.C. 684(b)(5))*. Provides for financial assistance for institutions of higher education for the establishment, construction, including equipment and operation, of a National Institution for the Deaf.

(28) *Housing Act of 1959 (12 U.S.C. 1701(q)(c)(3))*. This act authorizes loans to nonprofit corporations to be used for the construction of housing and related facilities for elderly families. Also, the provisions of the act provide for rehabilitation, alteration, conversion or improvement of existing structures which are otherwise inadequate for proposed dwellings used by such families.

(29) *College Housing Act of 1950, as amended (12 U.S.C. 1749a(f))*. This act provides for Federal loans to assist educational institutions in providing housing and other educational facilities for students and faculties.

(30) *Housing and Urban Development Act of 1965 (42 U.S.C. 1500c–3, 3107)*. This act provides for Federal assistance for the following purposes:

(i) Grants to States and local public bodies to assist in any construction work to be carried out under the open-space land and urban beautification provisions contained therein. It provides for parks and recreation areas, conservation of land and other natural resources, and historical and scenic purposes.

(ii) Grants to local public bodies and agencies to finance specific project for basic public water facilities (including works for the storage, treatment, purification, and distribution of water), and for basic public sewer facilities (other than "treatment works" as defined in the Federal Water Pollution Control Act).

(iii) Grants to any local public body or agency to assist in financing neighborhood facilities. These facilities must be necessary for carrying out a program of health, recreational, social, or similar community service and located so as to be available for the use of the area's low or moderate income residents.

(31) *National Foundation on the Arts and the Humanities Act of 1965 (20 U.S.C. 954(k))*. The act establishes the "National Foundation on the Arts and the Humanities" which may provide matching grants to groups (nonprofit organizations and State and other public organizations) and to individuals engaged in creative and performing arts for the entire range of artistic activity, including construction of necessary facilities.

(32) *Public Works and Economic Development Act of 1965 (42 U.S.C. 3222)*. This act provides for Federal assistance for the following purposes:

(i) Grants for the acquisition or development of land or improvements for public works or development facility usage in redevelopment areas. It authorizes loans to assist in financing the purchase or development of land for public works which will assist in the creation of long-term employment opportunities in the area.

(ii) Loans for the purchase or development of land and facilities (including machinery and equipment) for industrial or commercial usage within redevelopment areas; guarantee of loans for working capital made to private borrowers by private lending institutions in connection with direct loan projects; and to contract to pay to, or on behalf of, business entities locating in redevelopment areas, a portion of the interest costs which they incur in financing their expansions from private sources.

(iii) Loans and grants to create economic development centers within designated county economic development districts.

(33) *High-Speed Ground Transportation Study (40 U.S.C. 1636(b))*. This act provides for financial assistance for construction activities in connection with research and development of different forms of high-speed ground transportation and demonstration projects relating to intercity rail passenger service.

(34) *Heart Disease, Cancer and Stroke Amendments of 1965 (42 U.S.C. 299(b)(4))*. This act provides for grants to public or nonprofit private universities, medical schools, research institutions, hospitals, and other public and nonprofit agencies and institutions, or associations thereof to assist in construction and equipment of facilities in connection with research, training, demonstration of patient care, diagnostic and treatment related to heart disease, cancer, stroke, and other major diseases.

(35) *Mental Retardation Facilities and Community Mental Health Centers Construction Act Amendments of 1965 (20 U.S.C. 618(g))*. These provisions provide for grants to institutions of higher education for construction of facilities for research or for research and related purposes relating to education for mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, crippled, or other health impaired children who by reason thereof require special education.

(36) *Vocational Rehabilitation Act Amendments of 1965 (29 U.S.C. 41a(b)(4))*. This act authorizes grants to assist in meeting the costs of construction of public or other nonprofit workshops and rehabilitation facilities.

(37) *Clean Air and Solid Waste Disposal Acts (42 U.S.C. 3256)*. This act provides for financial assistance to public (Federal, State, interstate, or local) authorities, agencies, and institutions, private agencies and institutions, and individuals in the construction of facilities for solid-waste disposal. The term construction includes the installation of initial equipment.

(38) *Medical Library Assistance Act of 1965 (42 U.S.C. 280b–3(b)(3))*. This act provides for grants to public or private non-profit agencies or institutions for the cost of construction of medical library facility.

(39) *Veterans Nursing Home Care Act (38 U.S.C. 5035(a)(8))*. The construction industry health and safety standards do not apply to this act since it is not subject to Reorganization Plan No. 14 of 1950.

(40) *National Capital Transportation Act of 1965 (40 U.S.C. 682(b)(4))*. This act provides for Federal assistance to the National Capital Transportation Agency for construction of a rail rapid transit system and related facilities for the Nation's Capital.

(41) *Alaska Centennial—1967 (80 Stat. 82)*. The program under this legislation has expired.

(42) *Model Secondary School for the Deaf Act (80 Stat. 1028)*. This act provides for funds to establish and operate, including construction and initial equipment of new buildings, expansion, remodeling, and alteration of existing buildings and equipment thereof, a model secondary school for the deaf to serve the residents of the District of Columbia and nearby States.

(43) *Allied Health Professions Personnel Training Act of 1966 (42 U.S.C. 295h(b)(2)(E))*. This act provides for grants to assist in the construction of new facilities for training centers for allied health professions, or replacement or rehabilitation of existing facilities for such centers.

(44) *Demonstration Cities and Metropolitan Development Act of 1966 (42 U.S.C. 3310; 12 U.S.C. 1715c; 42 U.S.C. 1416)*. This act provides for Federal assistance for the following purposes:

(i) Grants to assist in the construction, rehabilitation, alteration, or repair of residential property only if such residential property is designed for residential use for eight or more families to enable city demonstration agencies to carry out comprehensive city demonstration programs (42 U.S.C. 3310).

(ii) Amends the National Housing Act (12 U.S.C. 1715c) and the Housing Act of 1937 (42 U.S.C. 1416). See these acts for coverage.

(45) *Air Quality Act of 1967 (42 U.S.C. 1857j–3)*. This act provides for Federal assistance to public or nonprofit agencies, institutions, and organizations and to individuals, and contracts with public or private agencies, institutions, or persons for construction of research and development facilities and demonstration plants relating to the application of preventing or controlling discharges into the air of various types of pollutants.

(46) *Elementary and Secondary Education Amendments of 1967 (Title VII—Bilingual Education Act) (20 U.S.C. 880b–6)*. This act provides for Federal assistance to local educational agencies or to an institution of higher education applying jointly with a local educational agency for minor remodeling projects in

connection with bilingual education programs to meet the special needs of children with limited English-speaking ability in the United States.

(47) *Vocational Rehabilitation Amendments of 1967 (29 U.S.C. 42a(c)(3))*. This act authorizes Federal assistance to any public or nonprofit private agency or organization for the construction of a center for vocational rehabilitation of handicapped individuals who are both deaf and blind which shall be known as the National Center for Deaf-Blind Youths and Adults. Construction includes new buildings and expansion, remodeling, alteration and renovation of existing buildings, and initial equipment of such new, newly acquired, expanded, remodeled, altered, or renovated buildings.

(48) *National Visitor Center Facilities Act of 1968 (40 U.S.C. 808)*. This act authorizes agreements and leases with the owner of property in the District of Columbia known as Union Station for the use of all or a part of such property for a national visitor center to be known as the National Visitor Center. The agreements and leases shall provide for such alterations of the Union Station Building as necessary to provide adequate facilities for visitors. They also provide for the construction of a parking facility, including necessary approaches and ramps.

(49) *Juvenile Delinquency Prevention and Control Act of 1968 (42 U.S.C. 3843)*. This act provides for Federal grants to State, county, municipal, or other public agency or combination thereof for the construction of facilities to be used in connection with rehabilitation services for the diagnosis, treatment, and rehabilitation of delinquent youths and youths in danger of becoming delinquent.

(50) *Housing and Urban Development Act of 1968 (including New Communities Act of 1968) (42 U.S.C. 3909)*. This act provides for Federal assistance for the following purposes:

(i) Guarantees, and commitments to guarantee, the bonds, debentures, notes, and other obligations issued by new community developers to help finance new community development projects.

(ii) Amends section 212(a) of the National Housing Act, adding section 236 for "Rental Housing for Lower Income Families" and section 242 "Mortgage Insurance for Nonprofit Hospitals" thereto.

(51) *Public Health Service Act Amendment (Alcoholic and Narcotic Addict Rehabilitation Amendments of 1968) (42 U.S.C. 2681, et seq.)*. This act provides for grants to a public and nonprofit private agency or organization for construction projects consisting of any facilities (including post-hospitalization treatment facilities for the prevention and treatment of alcoholism or treatment) of narcotic addicts.

(52) *Vocational Education Amendments of 1968 (20 U.S.C. 1246)*. This act provides for grants to States for the construction of area vocational education school facilities. The act further provides grants to public educational agencies, organizations, or institutions for construction of residential schools to provide vocational education for the purpose of demonstrating the feasibility and desirability of such schools. The act still further provides grants to State boards, to colleges and universities, to public educational agencies, organizations or institutions to reduce the cost of borrowing funds for the construction or residential schools and dormitories.

(c) *VA and FHA housing*. In the course of the legislative development of section 107, it was recognized that section 107 would not apply to housing construction for which insurance was issued by the Federal Housing Authority and Veterans' Administration for individual home ownership. Concerning construction under the National Housing Act, Reorganization Plan No. 14 of 1950 applies to construction which is subject to the minimum wage requirements of section 212(a) thereof (12 U.S.C. 1715c).

§ 1518.13 Interpretation of statutory terms.

(a) The terms "construction," "alteration," and "repair" used in section 107 of the Act are also used in section 1 of the Davis-Bacon Act (40 U.S.C. 276a), providing minimum wage protection on Federal construction contracts, and section 1 of the Miller Act (40 U.S.C. 270a), providing performance and payment bond protection on Federal construction contracts. Similarly, the terms "contractor" and "subcontractor" are used in those statutes, as well as in Copeland (Anti-Kickback) Act (40 U.S.C. 276c) and the Contract Work Hours and Safety Standards Act itself, which apply concurrently with the Miller Act and the Davis-Bacon Act on Federal construction contracts and also apply to most federally assisted construction contracts. The use of the same or identical terms in these statutes which apply concurrently with section 107 of the Act have considerable precedential value in ascertaining the coverage of section 107.

(b) It should be noted that section 1 of the Davis-Bacon Act limits minimum wage protection to laborers and mechanics "employed directly" upon the "site of the work." There is no comparable limitation in section 107 of the Act. Section 107 expressly requires as a self-executing condition of each covered contract that no contractor or subcontractor shall require "any laborer or mechanic employed in the performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety" as these health and safety standards are applied in the rules of the Secretary of Labor. However, it should be borne in mind that it is clearly the Congressional intent to apply section 107 of the Act only to the construction industry. Therefore, employers having what are technically subcontracts for a part of the prime contract performance would not be considered "subcontractors" unless that part may be reasonably characterized as "construction," "alteration," or "repair."

§ 1518.14 Federal contract for "mixed" types of performance.

(a) It is the intent of the Congress to provide safety and health protection of Federal, federally financed, or federally assisted construction. See, for example, H. Report. No. 91–241, 91st Cong., first session, p. 1 (1969). Thus, it is clear that when a Federal contract calls for mixed types of performance, such as both manufacturing and construction, section 107 would apply to the construction. By its express terms, section 107 applies to a contract which is "for construction, alteration, and/or repair." Such a contract is not required to be exclusively for such services. The application of the section is not limited to contracts which permit an overall characterization as "construction contracts." The text of section 107 is not so limited.

(b) When the mixed types of performances include both construction and manufacturing, see also § 1518.15(b) concerning the relationship between the Walsh-Healey Public Contracts Act and section 107.

§ 1518.15 Relationship to the Service Contract Act; Walsh-Healey Public Contracts Act.

(a) A contract for "construction" is one for nonpersonal service. See, e.g., 41 CFR 1–1.208. Section 2(e) of the Service Contract Act of 1950 (bid specification therefor) exceeding $2,500, the "principal purpose" of which is to furnish services to the United States through the use of "service employees," that certain safety and health standards be met. See 29 CFR Part 1516, which contains the Department rules concerning these standards. Section 7 of the Service Contract Act provides that the Act shall not apply to "any contract of the United States or District of Columbia for construction, alteration, and/or repair, including painting and decorating of public buildings or public works." It is clear from the legislative history of section 107 that no gaps in coverage between the two statutes are intended.

(b) The Walsh-Healey Public Contracts Act requires that contracts entered into by any Federal agency for the manufacture or furnishing of materials, supplies, articles, and equipment in any amount exceeding $10,000 must contain among other provisions a requirement that "no part of such contract will be performed nor with any of their materials, supplies, articles or equipment to be manufactured or furnished under said contract be manufactured or fabricated in any plants, factories, buildings, or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of said contract." The rules of the Secretary concerning these standards are published in 29 CFR Part 50–204, and express the Secretary of Labor's interpretation and application of section 1(e) of the Walsh-Healey Public Contracts Act to certain particular working conditions. None of the described working conditions are intended to deal with

construction activities, although such activities may conceivably be a part of a contract which is subject to the Walsh-Healey Public Contracts Act. Nevertheless, such activities remain subject to the general statutory duty prescribed by section 1(e).

(1) Section 103(b) of the Contract Work Hours and Safety Standards Act provides, among other things, that the Act shall not apply to any work required to be done in accordance with the provisions of the Walsh-Healey Public Contracts Act.

§ 1518.16 Rules of construction.

Whenever an obligation is prescribed as that of the employer under the standards in this part, it may be satisfied by the prime contractor, any subcontractors, or by combination thereof. When employment is by a subcontractor, the paramount concern is that the laborers and mechanics are afforded safe and healthful working conditions. If an obligation is undertaken by a prime contractor or any subcontractors in addition to the immediate employer, such prime contractor, and subcontractors, as well as the immediate employer, shall be considered subject to the enforcement provisions of the Act.

Subpart C—General Safety and Health Provisions

§ 1518.20 General safety and health provisions.

(a) *Contractor requirements.* (1) Section 107 of the Act requires that it shall be a condition of each contract which is entered into under legislation subject to Reorganization Plan Number 14 of 1950 (64 Stat. 1267), as defined in § 1518.12, and is for construction, alteration, and/or repair, including painting and decorating, that no contractor or subcontractor for any part of the contract work shall require any laborer or mechanic employed in the performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety.

(b) *Accident prevention responsibilities.* (1) It shall be the responsibility of the employer to initiate and maintain such programs as may be necessary to comply with this part.

(2) Such programs shall provide for frequent and regular inspections of the job sites, materials, and equipment to be made by competent persons designated by the employers.

(3) The use of unsafe machinery, tools, materials, or equipment is prohibited. Unsafe tools, materials, or equipment shall be identified as unsafe by tagging or by locking the controls to render them inoperable, or they shall be removed from service.

(4) The employer shall permit only those employees qualified by training or experience to operate equipment and machinery.

§ 1518.21 Safety training and education.

(a) *General requirements.* The Director shall, pursuant to section 107(f) of the Act, establish and supervise programs for the education and training of employers and employees in the recognition, avoidance and prevention of unsafe conditions in employments covered by the act.

(b) *Employer responsibility.* (1) The employer should avail himself of the safety and health training programs the Director provides.

(2) The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury.

(3) Employees required to handle or use poisons, caustics, and other harmful substances shall be instructed regarding the safe handling and use, and be made aware of the potential hazards, personal hygiene, and personal protective measures required.

(4) In job site areas where harmful plants or animals are present, employees who may be exposed shall be instructed regarding the potential hazards, and how to avoid injury, and the first aid procedures to be used in the event of injury.

(5) Employees required to handle or use flammable liquids, gases, or toxic materials shall be instructed in the safe handling and use of these materials and made aware of the specific requirements contained in Subparts D, F, and other applicable subparts of this part.

(6) All employees required to enter into confined or enclosed spaces shall be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of protective and emergency equipment required. The employer shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas.

§ 1518.22 Recording and reporting of injuries.

(a) *Employer requirements.* Subpart W of this part contains requirements and procedures for the recording, reporting, maintenance, and submission of the injury data and reports deemed necessary to achieve the objective in section 107(f) of the Act.

§ 1518.23 First aid and medical attention.

First aid services and provisions for medical care shall be made available by the employer for every employee covered by these regulations. Regulations prescribing specific requirements for first aid, medical attention, and emergency facilities are contained in Subpart D of this part.

§ 1518.24 Fire protection and prevention.

The employer shall be responsible for the development and maintenance of an effective fire protection and prevention program at the job site throughout all phases of the construction, repair, alteration, or demolition work. The employer shall ensure the availability of the fire protection and suppression equipment required by Subpart F of this part.

§ 1518.25 Housekeeping.

(a) During the course of construction, alteration, or repairs, form and scrap lumber with protruding nails, and all other debris, shall be kept cleared from work areas, passageways, and stairs, in and around buildings or other structures.

(b) Combustible scrap and debris shall be removed at regular intervals during the course of construction. Safe means shall be provided to facilitate such removal.

(c) Containers shall be provided for the collection and separation of waste, trash, oily and used rags, and other refuse. Containers used for garbage and other wastes shall be equipped with covers. Garbage shall be disposed of at frequent and regular intervals.

§ 1518.26 Illumination.

Construction areas, aisles, stairs, ramps, runways, corridors, offices, shops, and storage areas where work is in progress shall be lighted with either natural or artificial illumination. The minimum illumination requirements for work areas are contained in Subpart D of this part.

§ 1518.27 Sanitation.

Health and sanitation requirements for drinking water are contained in Subpart D of this part.

§ 1518.28 Personal protective equipment.

(a) The employer is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions and where this part indicates the need for using such equipment to reduce the hazards to the employees.

(b) Regulations governing the use, selection, and maintenance of personal protective and lifesaving equipment are described under Subpart E of this part.

§ 1518.29 Acceptable certifications.

(a) *Current vessels.* Current and valid certification by an insurance company or regulatory authority shall be deemed as acceptable evidence of safe installation, inspection, testing of pressure vessels provided by the employer.

(b) *Boilers.* Power boilers provided by the employer shall be deemed to be in compliance with the requirements of this part when evidence of current and valid certification by an insurance company or regulatory authority attesting to the safe installation, inspection, and testing is presented.

(c) *Other requirements.* Regulations prescribing specific requirements for other types of pressure vessels and similar equipment are contained in Subparts F and O of this part.

§ 1518.30 Shipbuilding and ship repairing.

(a) *General.* Shipbuilding, ship repairing, alterations, and maintenance performed on ships under Government contract, except naval ship construction, is work subject to the Act.

(b) *Applicable safety and health standards.* For the purpose of work carried out under this section, the safety and health regulations promulgated by the Secretary of Labor shall apply: Part 1501 of this title, Safety and Health Regulations for Ship Repairing, and Part 1502 of this title, Safety and Health Regulations for Shipbuilding.

§ 1518.40 Definitions.

The following definitions shall apply in the application of the regulations in this part:

(a) "Act" means the Contract Work Hours and Safety Standards Act commonly known as the Construction Safety Act.

(b) "Approved" means sanctioned, endorsed, accredited, certified, or accepted as satisfactory by a duly constituted and nationally recognized authority or agency.

(c) "Authorized or designated person" means a person approved or assigned by management to perform a specific type of duty or duties or to be at a specific location or locations at the job site.

(d) "Boom-type excavator" means a power-operated crane-type excavating machine, usually used for digging or moving materials. Some excavators of this type are commonly known as a dipper stick shovel, back-hoe, trench-hoe shovel, dragline, grab bucket, clamshell, or orange peel excavator.

(e) "Barricade" means an obstruction to prevent the passage of persons, vehicles, or flying materials.

(f) "Competent person," means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to the employees, and shall have the authorization to take prompt corrective measures to eliminate them.

(g) "Bureau" shall mean Bureau of Labor Standards.

(h) "Derrick" means an apparatus for hoisting or swinging loads, consisting of a mast supported by guys or braces. It usually has a boom, hinged at the lower end, for carrying the load. It may be power- or hand-operated.

(i) "Elevator, construction," includes any means used to hoist persons or material of any kind attached to a structure in the course of construction, when operated within guides, by any power other than manual.

(j) "Employee" shall include every laborer or mechanic under the Act regardless of the contractual relationship alleged to exist between the laborer or mechanic and the contractor or subcontractor who engaged him.

(k) "Employer" shall include any contractor or subcontractor covered by the Act.

(l) "Haulage vehicle," as used in these regulations, means a self-propelled vehicle including its trailer, used to transport materials on construction projects. The term "haulage vehicle" includes trucks, truck and trailer combinations, and all other similar equipment used for haulage.

(m) "Hoist" means any apparatus by which a pulling and releasing action can be transmitted through ropes, wire rope, or chains to bring about the raising or lowering of loads.

(n) "Lanyard" means a rope suitable for supporting a worker if one end is fastened to a safety belt and the other end is secured to a substantial object or a safety line.

(o) "Loading device" means a mobile mechanical-powered machine of the skip-loader type used for picking up materials and loading or dumping them into haulage vehicles, bins, or hoppers, excluding boom-type excavators and endless belt or chain conveyors.

(p) "Ramp" means a surfaced sloping passageway connecting two different levels.

(q) "Lifeline" is one that is provided to protect a worker from falls caused by failure of scaffolds, working platforms, or loss of balance, and shall extend to within 4 feet of ground or other stable surface.

(r) "Scaffold" means the complete scaffold structure, including the platform and all supporting members.

(s) "Shall" means mandatory.

(t) "Should" means recommended.

§ 1518.49 Incorporation by reference.

(a) The specifications, standards and codes of agencies of the U.S. Government and organizations which are not agencies of the U.S. Government, to the extent they are legally incorporated by reference in this part, have the same force and effect as other standards in this part. The locations where these specifications, standards, and codes may be examined are as follows:

(1) Offices of the Bureau of Labor Standards, U.S. Department of Labor, Railway Labor Building, Washington, DC 20210.

(2) The Regional and Field Offices of the Bureau of Labor Standards which are listed in the U.S. Government Manual 1970–71, at page 324.

(b) Any changes in the specifications, standards and codes incorporated by reference in this part and an official historic file of such changes are available at the offices referred to in paragraph (a) of this section. All questions as to the applicability of such changes should also be referred to these offices.

Subpart D—Occupational Health and Environmental Controls

§ 1518.50 Medical services and first aid.

(a) The employer shall ensure the ready availability of medical personnel for advice and consultation on matters of occupational health.

(b) In the absence of an infirmary, clinic, or hospital in near proximity to the job site which is available for the treatment of all injured employees, a person or persons who have met the training qualifications of the U.S. Bureau of Mines or the American Red Cross shall be available to render first aid. First aid supplies approved by the consulting physician shall be readily available.

(c) The first aid materials shall consist of a weather proof container with individual sealed packages for each type of item. The contents of the first aid kit shall be checked before being sent out on each job and at least weekly on each job to ensure that the expended items are replaced.

(d) Provisions shall be made in advance for prompt medical attention in case of serious injury.

(e) Proper equipment for prompt transportation of the injured person to a physician or hospital, or a communication system for contacting necessary ambulance service, shall be provided.

(f) There shall be at least one employee with training to administer emergency first aid at any isolated location where 10 or more employees are employed. The training shall be equal to that of the U.S. Bureau of Mines or American Red Cross.

§ 1518.51 Sanitation.

(a) *Potable water.* (1) An adequate supply of potable water shall be provided in all places of employment.

(2) Portable containers used to dispense drinking water shall be capable of being tightly closed, and equipped with a tap. Water shall not be dipped from containers.

(3) Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose.

(4) The common drinking cup is prohibited.

(5) Where single service cups (to be used but once) are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

(b) *Nonpotable water.* (1) Outlets for nonpotable water, such as water for industrial or firefighting purposes only, shall be identified by signs meeting the requirements of Subpart G of this part, to indicate clearly that the water is unsafe and is not to be used for drinking, washing, or cooking purposes.

(2) There shall be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing nonpotable water.

(c) *Toilets at construction job sites.* (1) Toilets shall be provided for employees according to the following table:

TABLE D–1

Number of employees:	*Minimum number of facilities*
1 to 9	1
10 to 24	2
25 to 49	3
50 to 74	4
75 to 100	5
Over 100, 1 for each additional 30 employees.	

(2) Water closets (flush toilets) shall be used where sanitary sewers are available.

(3) Job sites, not provided with a sanitary sewer, shall be provided with one of the following toilet facilities unless prohibited by local codes:

(i) Privies (where their use will not contaminate ground or surface water);
(ii) Chemical toilets;
(iii) Recirculating toilets;
(iv) Combustion toilets.

(d) *Food handling.* All employees' food service facilities and operations shall meet the applicable laws, ordinances, and regulations of the jurisdictions in which they are located.

(e) *Temporary sleeping quarters.* When temporary sleeping quarters are provided, they shall be heated, ventilated, and lighted.

(f) *Washing facilities.* The employer shall provide adequate washing facilities for employees engaged in the application of paints, coating, herbicides, or insecticides, or in other operations where contaminants can, by ingestion or absorption, be detrimental to the health of the employees.

§ 1518.52 Occupational noise exposure.

(a) Protection against the effects of noise exposure shall be provided when the sound levels exceed those shown in Table D–2 of this section when measured on the A-scale of a standard sound level meter at slow response.

(b) When employees are subjected to sound levels exceeding those listed in Table D–2 of this section, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of the table, personal protective equipment as required in Subpart E, shall be provided and used to reduce sound levels within the levels of the table.

(c) If the variations in noise level involve maxima at intervals of 1 second or less, it is to be considered continuous.

(d) (1) In all cases where the sound levels exceed the values shown herein, a continuing, effective hearing conservation program shall be administered.

TABLE D–2—PERMISSIBLE NOISE EXPOSURES

Duration per day, hours:	*Sound level dBA slow Response*
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

(2) When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions:

$$\frac{C1}{T1}+\frac{C2}{T2}\cdot\cdot\cdot\cdot\cdot+\frac{Cn}{Tn}$$

exceeds unity, then the mixed exposure should be considered to exceed the limit value. Cn indicates the total time of exposure at a specified noise level, and Tn indicates the total time of exposure permitted at that level.

(e) Exposure to impulsive or impact noise should not exceed 140 dBA peak sound pressure level.

§ 1518.53 Ionizing radiation.

(a) In construction and related activities involving the use of sources of ionizing radiation, the applicable provisions of the Atomic Energy Commission's Standards for Protection Against Radiation (10 CFR Part 20), relating to protection against occupational radiation exposure, shall apply.

(b) Any activity which involves the use of radioactive material or X-ray, whether or not under license from the Atomic Energy Commission, shall be performed by competent persons specially trained in the proper and safe operation of such equipment. In the case of materials used under Commission license, only persons actually licensed, or competent persons under direction and supervision of the licensee, shall perform such work.

§ 1518.54 Nonionizing radiation.

(a) Only qualified and trained employees shall be assigned to install, adjust, and operate laser equipment.

(b) All employees, in areas where lasers are used, shall be instructed with respect to the hazards of the equipment and the laser beams, direct or reflected, and of the safety precautions established to prevent injury.

(c) Employees, when working in areas in which a potential exposure to direct or reflected laser light exists, shall be provided with antilaser eye protection devices as specified in Subpart E of this part.

(d) Areas in which lasers are used shall be posted with warning placards meeting the requirements of Subpart G of this part to warn the other employees who may be exposed.

(e) Beam shutters or caps shall be utilized, or the laser turned off, when laser transmission is not actually required. When the laser is left unattended for a substantial period of time, such as during lunch hour, overnight, or at change of shifts, the laser shall be turned off.

(f) Only mechanical or electronic means shall be used as a detector for guiding the internal alignment of the laser.

(g) The laser beam shall not be directed at employees.

§ 1518.55 Gases, vapors, fumes, dusts, and mists.

(a) Exposure of employees to inhalation, ingestion, skin absorption, or contact to any material or substance at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970" of the American Conference of Governmental Industrial Hygienists, shall be avoided.

(b) When engineering or administrative controls cannot be employed to reduce or eliminate the exposure, protective equipment, as required in Subpart E of this part, shall be used.

§ 1518.56 Illumination.

(a) *General.* Construction areas, ramps, runways, corridors, offices, shops, and storage areas shall be lighted to not less than the minimum illumination intensities listed in Table D–3 while any work is in progress:

TABLE D–3—MINIMUM ILLUMINATION INTENSITIES IN FOOT-CANDLES

Foot-candles:	*Area or operation*
10	General construction area lighting.
10	General construction areas, concrete placement, excavation and waste areas, accessways, active storage areas, loading platforms, refueling, and field maintenance areas.
10	Indoors: warehouses, corridors, hallways, and exitways.
5	Tunnels, shafts, and general underground work areas: (Exception: minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and sealing. Bureau of Mines approved cap lights shall be acceptable for use in the tunnel heading.)
50	General construction plant and shops (e.g., batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active storerooms, barracks or living quarters, locker or dressing rooms, mess halls, and indoor toilets and workrooms).
70	First aid stations, infirmaries, and offices.

(b) *Other areas.* For areas or operations not covered above, refer to the American National Standard A11.1–1965, R1970, Practice for Industrial Lighting, for recommended values of illumination.

§ 1518.57 Ventilation.

(a) *General.* Whenever harmful dusts, fumes, mists, vapors, or gases exist, or are produced in the course of construction work, in quantities giving rise to harmful exposure of employees, and prevention or elimination of such hazards is not practicable, such hazards shall be controlled by the application of general ventilation, local exhaust ventilation, or other effective mechanical means.

(b) *Local exhaust ventilation.* Local exhaust ventilation when used as described in (a) shall be designed to prevent dispersion into the air of dusts, fumes, mists, vapors, and gases in concentrations causing harmful exposure. Such exhaust systems shall be so designed that dusts, fumes, mists, vapors, or gases are not drawn through the work area of employees.

(c) *Design and operation.* Exhaust fans, jets, ducts, hoods, separators, and all necessary appurtenances, including refuse receptacles, shall be so designed, constructed, maintained and operated as to ensure the required protection by maintaining a volume and velocity of exhaust aid sufficient to gather dusts, fumes, vapors, or gases from said equipment or process, and to convey them to suitable points of safe disposal, thereby preventing their dispersion in harmful quantities into the atmosphere where employees work.

(d) *Duration of operations.* (1) The exhaust system shall be in operation continually during all operations which it

is designed to serve. If the employee remains in the contaminated zone, the system shall continue to operate for some time after the cessation of said operations, the length of time to depend upon the individual circumstances and effectiveness of the general ventilation system.

(2) Since dust capable of causing disability is, according to the best medical opinion, of microscopic size, tending to remain for hours in suspension in still air, it is essential that the exhaust system be continued in operation for a time after the work process or equipment served by the same shall have ceased, in order to ensure the removal of the harmful elements to the required extent. For the same reason, employees wearing respiratory equipment should not remove same immediately until the atmosphere seems clear.

(e) *Disposal of exhaust materials.* The air outlet from every dust separator, and the dusts, fumes, mists, vapors, or gases collected by an exhaust or ventilating system shall discharge to the outside atmosphere. Collecting systems which return air to work area may be used if concentrations which accumulate in the work area air do not result in harmful exposure to employees. Dust and refuse discharged from an exhaust system shall be disposed of in such a manner that it will not result in harmful exposure to employees.

Subpart E—Personal Protective and Life Saving Equipment

§ 1518.100 Head protection.

(a) Employees working in areas where there is a danger of head injury from impact, or from falling of flying objects, or from electrical shock and burns, shall be protected by protective helmets.

(b) Helmets for the protection of employees against impact and penetration of falling and flying objects shall meet the specifications contained in American National Standards Institute, Z89.1–1969, Safety Requirements for Industrial Head Protection.

(c) Helmets for the head protection of employees exposed to high voltage electrical shock and burns shall meet the specifications contained in American National Standards Institute, Z89.2–1970.

§ 1518.101 Hearing protection.

(a) Wherever it is not feasible to reduce the noise levels or duration of exposures to those specified in Table D–2, Permissible Noise Exposures, in § 1518.52, ear protective devices shall be provided and used.

(b) Ear protective devices inserted in the ear shall be fitted or determined individually and shall be initiated by and subject to medical supervision.

(c) Plain cotton is not an acceptable protective device.

§ 1518.102 Eye and face protection.

(a) *General.* (1) Employees shall be provided with eye and face protection equipment when machines or operations present potential eye or face injury from physical, chemical, or radiation agents.

(2) Eye and face protection equipment required by this Part shall meet the requirements specified in American National Standards Institute, Z87.1–1968, Practice for Occupational and Educational Eye and Face Protection.

(3) Laser and maser eye protection equipment required by this regulation shall meet the requirements specified in American National Standards Institute, Z136–197 (date to be inserted), Safe Use of Lasers and Masers.

(4) Employees whose vision requires the use of corrective lenses in spectacles, when required by this regulation to wear eye protection, shall be protected by goggles or spectacles of one of the following types:

(i) Spectacles whose protective lenses provide optical correction;

(ii) Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles;

(iii) Goggles that incorporate corrective lenses mounted behind the protective lenses.

(5) Face and eye protection equipment shall be kept clean and in good repair. The use of this type equipment with structural or optical defects shall be prohibited.

(6) Table E–1 shall be used as a guide in the selection of face and eye protection for the hazards and operations noted.

TABLE E–1—EYE AND FACE PROTECTOR SELECTION GUIDE



1. GOGGLES, Flexible Fitting, Regular Ventilation
2. GOGGLES, Flexible Fitting, Hooded Ventilation
3. GOGGLES, Cushioned Fitting, Rigid Body
*4. SPECTACLES, Metal Frame, with Sideshields
*5. SPECTACLES, Plastic Frame, with Sideshields
*6. SPECTACLES, Metal-Plastic Frame, with Sideshields
** 7. WELDING GOGGLES, Eyecup Type, Tinted Lenses (Illustrated)
7A. CHIPPING GOGGLES, Eyecup Type, Clear Safety Lenses (Not Illustrated)
** 8. WELDING GOGGLES, Coverspec Type Tinted Lenses (Illustrated)
8A. CHIPPING GOGGLES, Coverspec Type, Clear Safety Lenses (Not Illustrated)
** 9. WELDING GOGGLES, Coverspec Type, Tinted Plate Lens
10. FACE SHIELD (Available with Plastic or Mesh Window)
**11. WELDING HELMETS

*Nonsideshield spectacles are available for limited hazard use requiring only frontal protection.

**See Table E–2, in paragraph (b) of this section, Filter Lens Shade Numbers for Protection Against Radiant Energy.

APPLICATIONS		
OPERATION	HAZARDS	RECOMMENDED PROTECTORS: Bold Type Numbers Signify Preferred Protection
ACETYLENE–BURNING ACETYLENE–CUTTING ACETYLENE–WELDING	SPARKS, HARMFUL RAYS, MOLTEN METAL, FLYING PARTICLES	7, 8, 9
CHEMICAL HANDLING	SPLASH, ACID BURNS, FUMES	2, 10 (For severe exposure add 10 over 2)
CHIPPING	FLYING PARTICLES	1, 3, 4, 5, 6, 7A, 8A
ELECTRIC (ARC) WELDING	SPARKS, INTENSE RAYS, MOLTEN METAL	9, 11 (11 in combination with 4, 5, 6, in tinted lenses, advisable)
FURNACE OPERATIONS	GLARE, HEAT, MOLTEN METAL	7, 8, 9 (For severe exposure add 10)
GRINDING–LIGHT	FLYING PARTICLES	1, 3, 4, 5, 6, 10
GRINDING–HEAVY	FLYING PARTICLES	1, 3, 7A, 8A (For severe exposure add 10)
LABORATORY	CHEMICAL SPLASH, GLASS BREAKAGE	2 (10 when in combination with 4, 5, 6)
MACHINING	FLYING PARTICLES	1, 3, 4, 5, 6, 10
MOLTEN METALS	HEAT, GLARE, SPARKS, SPLASH	7, 8 (10 in combination with 4, 5, 6, in tinted lenses)
SPOT WELDING	FLYING PARTICLES, SPARKS	1, 3, 4, 5, 6, 10

(b) *Protection against radiant energy.*—(1) *Selection of shade numbers for welding filter.* Table E–2 shall be used as a guide for the selection of the proper shade numbers of filter lenses or plates used in welding. Shades more dense than those listed may be used to suit the individual's needs.

TABLE E–2—FILTER LENS SHADE NUMBERS FOR PROTECTION AGAINST RADIANT ENERGY

Welding operation	*Shade number*
Shielded metal-arc welding 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	10
Gas-shielded arc welding (nonferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	11

Welding operation	Shade number
Gas-shielded arc welding (ferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	12
Shielded metal-arc welding 3/16-, 7/32-, 1/4-inch diameter electrodes	12
5/16-, 3/8-inch diameter electrodes	14
Atomic hydrogen welding	10–14
Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6
Gas welding (light), up to 1/8-inch	4 or 5
Gas welding (medium), 1/8-inch to 1/2-inch	5 or 6
Gas welding (heavy), over 1/2-inch	6 or 8

(2) *Laser protection.* (i) Employees whose occupation or assignment requires exposure to laser beams shall be furnished suitable laser safety goggles which will protect for the specific wavelength of the laser and be of optical density (O.D.) adequate for the energy involved. Table E–3 lists the maximum power or energy density for which adequate protection is afforded by glasses of optical densities from 1 through 8.

TABLE E–3—SELECTING LASER SAFETY GLASS

Intensity			Attenuation	
Q-switch maximum energy density (j/cm²)	Non-Q-switch maximum energy density (j/cm²)	CW maximum power density (watts/cm²)	Optical density (O.D.)	Attenuation factor
10^{-7}	10^{-6}	10^{-5}	1	10
10^{-6}	10^{-5}	10^{-4}	2	10^{2}
10^{-5}	10^{-4}	10^{-3}	3	10^{3}
10^{-4}	10^{-3}	10^{-2}	4	10^{4}
10^{-3}	10^{-2}	10^{-1}	5	10^{5}
10^{-2}	10^{-1}	1	6	10^{6}
10^{-1}	1.0	1.0	7	10^{7}
1.0	10.0	10.0	8	10^{8}

(ii) All protective goggles shall bear a label identifying the following data:

(*a*) The laser wavelengths for which use is intended;

(*b*) The optical density of those wavelengths;

(*c*) The visible light transmission.

§ 1518.103 Respiratory protection.

(a) *General.* (1) In emergencies, or when controls required by Subpart D of this part either fail or are inadequate to prevent harmful exposure to employees, appropriate respiratory protective devices shall be provided by the employer and shall be used.

(2) Respiratory protective devices shall be approved by the U.S. Bureau of Mines or acceptable to the U.S. Department of Labor for the specific contaminant to which the employee is exposed.

(b) *Respirator selection.* (1) The chemical and physical properties of the contaminant, as well as the toxicity and concentration of the hazardous material, shall be considered in selecting the proper respirators.

(2) The nature and extent of the hazard, work requirements, and conditions, as well as the limitations and characteristics of the available respirators, shall also be factors considered in making the proper selection.

(3) The following table lists the types of respirators required for protection in dangerous atmospheres:

TABLE E–4.—SELECTION OF RESPIRATORS

Hazard	Respirator (See Note 1.)
Oxygen deficiency	Self-contained breathing apparatus. Hose mask with blower. Combination air-line respirator with auxiliary self-contained air supply or an air-storage receiver with alarm.
Gas and vapor contaminants immediately dangerous to life and health.	Self-contained breathing apparatus. Hose mask with blower. Air-purifying, full facepiece respirator with chemical canister (gas mask). Self-rescue mouthpiece respirator (for escape only). Combination air-line respirator with auxiliary self-contained air supply or an air-storage receiver with alarm.
Not immediately dangerous to life and health.	Air-line respirator. Hose mask without blower. Air-purifying, half-mask or mouthpiece respirator with chemical cartridge.
Particulate contaminants immediately dangerous to life and health.	Self-contained breathing apparatus. Hose mask with blower. Air-purifying, full facepiece respirator with appropriate filter. Self-rescue mouthpiece respirator (for escape only). Combination air-line respirator with auxiliary self-contained air supply or an air-storage receiver with alarm.
Not immediately dangerous to life and health.	Air-purifying, half-mask or mouthpiece respirator with filter pad or cartridge. Air-line respirator. Air-line abrasive-blasting respirator. Hose-mask without blower.
Combination gas, vapor, and particulate contaminants immediately dangerous to life and health.	Self-contained breathing apparatus. Hose mask with blower. Air-purifying, full facepiece respirator with chemical canister and appropriate filter (gas mask with filter). Self-rescue mouthpiece respirator (for escape only). Combination air-line respirator with auxiliary self-contained air supply or an air-storage receiver with alarm.
Not immediately dangerous to life and health.	Air-line respirator. Hose mask without blower. Air-purifying, half-mask or mouthpiece respirator with chemical cartridge and appropriate filter.

NOTE: For the purpose of this part, "immediately dangerous to life and health" is defined as a condition that either poses an immediate threat to life and health or an immediate threat of severe exposure to contaminants, such as radioactive materials, which are likely to have adverse delayed effects on health.

(c) *Selection, issuance, use and care of respirators.* (1) Employees required to use respiratory protective equipment approved for use in atmospheres immediately dangerous to life shall be thoroughly trained in its use. Employees required to use other types of respiratory protective equipment shall be instructed in the use and limitations of such equipment.

(2) Respiratory protective equipment shall be inspected regularly and maintained in good condition. Gas mask canisters and chemical cartridges shall be replaced as necessary so as to provide complete protection. Mechanical filters shall be cleaned or replaced as necessary so as to avoid undue resistance to breathing.

(3) Respiratory protective equipment which has been previously used shall be cleaned and disinfected before it is issued by the employer to another employee. Emergency rescue equipment shall be cleaned and disinfected immediately after each use.

§ 1518.104 Safety belts, lifelines, and lanyards.

(a) Lifelines, safety belts, and lanyards shall be used only for employee safeguarding. Should any of these items be subjected to actual loading or load testing, they shall be immediately removed from service and destroyed.

(b) Lifelines shall be secured above the point of operation to an anchorage or structural member capable of supporting a minimum dead weight of 5,400 pounds.

(c) Lifelines used on rock-scaling operations, or in areas where the lifeline may be subjected to cutting or abrasion, shall be a minimum of 7/8-inch wire core manila rope. For all other lifeline applications, a minimum of 3/4-inch manila or equivalent, with a minimum breaking strength of 5,400 pounds, shall be used.

(d) Safety belt lanyard ropes shall be a minimum of 1/2-inch nylon, or equivalent, with a maximum length of 6 feet. The rope shall have a nominal breaking strength of 6,200 pounds.

(e) All safety belt and lanyard hardware shall be drop forged or pressed steel, cadmium plated in accordance with type 1, Class B plating specified in Federal Specification QQ–P–416. Surface shall be smooth and free of sharp edges.

(f) All safety belt and lanyard hardware, except rivets, shall be capable of withstanding a tensile loading of 4,000 pounds without cracking, breaking, or taking a permanent deformation.

§ 1518.105 Safety nets.

(a) Where safety net protection is required by this part, operations shall not be undertaken until the net is in place and has been tested.

(b) Nets shall extend 8 feet beyond the edge of the work surface where workmen are exposed.

(c) The maximum mesh size of nets shall be 6 inches by 6 inches.

(d) Forged steel safety hooks or shackles shall be used to fasten the net to its supports.

(e) Connections between net panels shall develop the full strength of the net.

§ 1518.106 Working over or near water.

(a) Employees working over or near water, where the danger of drowning exists, shall be provided with U.S. Coast Guard-approved life jacket or buoyant work vests.

(b) Prior to and after each use, the buoyant work vests or life preservers shall be inspected for defects which

would alter their strength or buoyancy. Defective units shall not be used.

(c) Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations.

Subpart F—Fire Protection and Prevention

§ 1518.150 Definitions.

(a) "Flammable liquids" mean any liquid having a flash point below 140° F. and having a vapor pressure not exceeding 40 pounds per square inch (absolute) at 100° F.

(b) "Combustible liquids" mean any liquid having a flash point at or above 140° F. (60° C.), and below 200° F.

(c) "Flash point" of the liquid means the temperature at which it gives off vapor sufficient to form an ignitable mixture with the air near the surface of the liquid or within the vessel used as determined by appropriate test procedure and apparatus as specified below.

(1) The flash point of liquids having a viscosity less than 45 Saybolt Universal Second(s) at 100° F. (37.8° C.) and a flash point below 175° F. (79.4° C.) shall be determined in accordance with the Standard Method of Test for Flash Point by the Tag Closed Tester, ASTM D–56–69.

(2) The flash point of liquids having a viscosity of 45 Saybolt Universal Second(s) or more at 175° F. (79.4° C.) or higher shall be determined in accordance with the Standard Method of Test for Flash Point by the Pensky Martens Closed Tester, ASTM D–93–69.

(d) "Liquefied petroleum gases," "LPG" and "LP Gas" mean and include any material which is composed predominantly of any of the following hydrocarbons, or mixtures of them, such as propane, propylene, butane (normal butane or iso-butane), and butylenes.

(e) "Portable tank" means a closed container having a liquid capacity more than 60 U.S. gallons, and not intended for fixed installation.

(f) "Safety can" means an approved closed container, of not more than 5 gallons capacity, having a spring-closing lid and spout cover and so designed that it will safety relieve internal pressure when subjected to fire exposure.

(g) "Vapor pressure" means the pressure, measured in pounds per square inch (absolute), exerted by a volatile liquid as determined by the "Standard Method of Test for Vapor Pressure of Petroleum Products (Reid Method)." (ASTM D323–58).

(h) "Fire brigade" means an organized group of employees that are knowledgeable, trained, and skilled in the safe evacuation of employees during emergency situations and in assisting in fire fighting operations.

(i) "Closed container" means a container so sealed by means of a lid or other device that neither liquid nor vapor will escape from it at ordinary temperatures.

(j) "Fire resistance" means so resistant to fire that, for specified time and under conditions of a standard heat intensity, it will not fail structurally and will not permit the side away from the fire to become hotter than a specified temperature. For purposes of this part, fire resistance shall be determined by the Standard Methods of Fire Tests of Building Construction and Materials, NFPA 251–1969.

(k) "Approved", for the purpose of this subpart, means equipment that has been listed or approved by a nationally recognized testing laboratory such as Factory Mutual Engineering Corp., or Underwriters' Laboratories, Inc., or Federal agencies such as Bureau of Mines, Department of Transportation (ICC), or U.S. Coast Guard, which issue approvals for such equipment.

§ 1518.151 Fire protection.

(a) *General requirements.* (1) The employer shall be responsible for the development of a fire protection program to be followed throughout all phases of the construction and demolition work, and he shall provide for the necessary firefighting equipment. As fire hazards occur, there shall be no delay for providing the necessary equipment.

(2) Access to all available firefighting equipment shall be maintained at all times.

(3) All firefighting equipment, provided by the employer, shall be conspicuously located.

(4) All firefighting equipment shall be periodically inspected and maintained in operating condition. Defective equipment shall be immediately replaced.

(5) As warranted by the project, the employer shall provide a trained and equipped firefighting organization (Fire Brigade) to assure adequate protection to life.

(b) *Water supply.* (1) A temporary or permanent water supply, of sufficient volume, duration, and pressure, required to properly operate the firefighting equipment shall be made available as soon as combustible materials accumulate.

(2) Where underground water mains are to be provided, they shall be installed, completed, and made available for use as soon as practicable.

(c) *Portable firefighting equipment*—(1) *Fire extinguishers.* (i) A fire extinguisher, rated not less than 2A, shall be provided for each 3,000 square feet of the protected area, or major fraction thereof. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 100 feet.

(ii) One 55-gallon open drum of water with two fire pails may be substituted for a fire extinguisher having a 2A rating.

(iii) One or more fire extinguishers, rated not less than 2A, shall be provided on each floor. In multistory buildings, at least one fire extinguisher shall be located adjacent to stairway.

(iv) Extinguishers and drums, subject to freezing, shall be protected from freezing.

(v) Where more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used, a fire extinguisher, rated not less than 10B, shall be provided within 50 feet, unless required otherwise.

(vi) Carbon tetrachloride and other vaporizing liquid fire extinguishers are prohibited.

(vii) Portable fire extinguishers shall be inspected periodically and maintained in accordance with Maintenance and Use of Portable Fire Extinguishers, NFPA No. 10A–1970.

(viii) Fire extinguishers, which have been listed or approved by a nationally recognized testing laboratory, shall be used to meet the requirements of this subpart.

(ix) Table F–1 may be used as a guide for selecting the appropriate portable fire extinguishers.

Table F-1 FIRE EXTINGUISHERS DATA

	WATER TYPE				FOAM	CARBON DIOXIDE	DRY CHEMICAL: SODIUM OR POTASSIUM BICARBONATE		DRY CHEMICAL: MULTI-PURPOSE ABC	
	STORED PRESSURE	CARTRIDGE OPERATED	WATER PUMP TANK	SODA ACID	FOAM	CO 2	CARTRIDGE OPERATED	STORED PRESSURE	STORED PRESSURE	CARTRIDGE OPERATED
CLASS A FIRES — WOOD, PAPER, TRASH HAVING GLOWING EMBERS	YES	YES	YES	YES	YES	NO (BUT WILL CONTROL SMALL SURFACE FIRES)	NO (BUT WILL CONTROL SMALL SURFACE FIRES)	NO (BUT WILL CONTROL SMALL SURFACE FIRES)	YES	YES
CLASS B FIRES — FLAMMABLE LIQUIDS, GASOLINE, OIL, PAINTS, GREASE, ETC.	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES
CLASS C FIRES — ELECTRICAL EQUIPMENT	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES
CLASS D FIRES — COMBUSTIBLE METALS	SPECIAL EXTINGUISHING AGENTS APPROVED BY RECOGNIZED TESTING LABORATORIES									
METHOD OF OPERATION	PULL PIN—SQUEEZE HANDLE	TURN UPSIDE DOWN AND BUMP	PUMP HANDLE	TURN UPSIDE DOWN	TURN UPSIDE DOWN	PULL PIN—SQUEEZE LEVER	RUPTURE CARTRIDGE—SQUEEZE LEVER	PULL PIN—SQUEEZE HANDLE	PULL PIN—SQUEEZE HANDLE	RUPTURE CARTRIDGE—SQUEEZE LEVER
RANGE	30'–40'	30'–40'	30'–40'	30'–40'	30'–40'	3'–8'	5'–20'	5'–20'	5'–20'	5'–20'
MAINTENANCE	CHECK AIR PRESSURE GAUGE MONTHLY	WEIGH GAS CARTRIDGE—ADD WATER IF REQUIRED ANNUALLY	DISCHARGE AND FILL WITH WATER ANNUALLY	DISCHARGE ANNUALLY RECHARGE	DISCHARGE ANNUALLY RECHARGE	WEIGH SEMI-ANNUALLY	WEIGH GAS CARTRIDGE—CHECK CONDITION OF DRY CHEMICAL ANNUALLY	CHECK PRESSURE GAUGE AND CONDITION OF DRY CHEMICAL ANNUALLY	CHECK PRESSURE GAUGE AND CONDITION OF DRY CHEMICAL ANNUALLY	WEIGH GAS CARTRIDGE—CHECK CONDITION OF DRY CHEMICAL ANNUALLY

(2) *Fire hose and connections.* (i) One hundred feet of 1½-inch hose, with a nozzle capable of discharging water at 25 gallons or more per minute, may be substituted for a fire extinguisher rated not more than 2A in the designated area provided that the hose line can reach all points in the area.

(ii) If fire hose connections are not compatible with local firefighting equipment, the contractor shall provide adapters, or equivalent, to permit connections.

(iii) During demolition involving combustible materials, charged hose lines, supplied by hydrants, water tank trucks with pumps, or equivalent, shall be made available.

(d) *Fixed firefighting equipment*—(1) *Sprinkler protection.* (i) If automatic sprinkler protection is to be provided, the installation shall closely follow the construction and be placed in service before or immediately following completion of each story.

(ii) During demolition or alterations, existing automatic sprinkler installations shall be retained in service as long as reasonable. The operation of sprinkler control valves shall be permitted only by properly authorized persons. Modification of sprinkler systems to permit alterations or additional demolition should be expedited so that the automatic protection may be returned to service as quickly as possible. Sprinkler control valves shall be checked daily at close of work to ascertain that the protection is in service.

(2) *Standpipes.* (i) In all structures in which standpipes are required, or where existing in structures being altered or demolished, they shall be brought up or maintained as construction progresses in such a manner that they are always ready for fire protection use. The standpipes should be provided with siamese fire department connections on the outside of the structure, at the street level, conspicuously marked and have at least one standard hose outlet at each floor.

(e) *Fire alarm devices.* (1) An alarm system shall be established by the employer whereby employees on the site and the local fire department can be alerted for an emergency.

(2) The alarm code and reporting instructions shall be conspicuously posted at phones and at employee entrances.

(f) *Fire cutoffs.* (1) Fire walls and exit stairways, required for the completed buildings, shall be given construction priority. Fire doors, with automatic closing devices, shall be hung on openings as soon as practicable.

(2) Fire cutoffs shall be retained in buildings undergoing alterations or demolition until operations necessitate their removal.

§ 1518.152 Fire prevention.

(a) *Ignition hazards.* (1) Electrical wiring and equipment for light, heat, or power purposes shall be installed in compliance with the requirements of the National Electrical Code, NFPA No. 70–1970, and the requirements of Subpart K of this part.

(2) Internal combustion engine powered equipment shall be so located that the exhausts are well away from combustible materials. When the exhausts are piped to outside the building under construction, a clearance of at least 6 inches shall be maintained between such piping and combustible material.

(3) Smoking shall be prohibited at or in the vicinity of operations which constitute a fire hazard, and shall be conspicuously posted: "No Smoking or Open Flame."

(4) Portable battery powered lighting equipment, used in connection with the storage, handling, or use of flammable gases or liquids, shall be of the type approved for the hazardous locations.

(b) *Temporary buildings.* (1) No temporary building shall be erected where it will adversely affect any means of exit.

(2) Temporary buildings, when located within another building or structure, shall be of either noncombustible construction or of combustible construction having a fire resistance of not less than 1 hour.

(3) Temporary buildings, located other than inside another building and not used for the storage, handling, or use of flammable or combustible liquids, flammable gases, explosives, or blasting agents, or similar hazardous occupancies, shall be located at a distance of not less than 10 feet from another building or structure. Groups of temporary buildings, not exceeding 2,000 square feet in aggregate, shall, for the purposes of this part, be considered a single temporary building.

(c) *Open yard storage.* (1) Combustible materials shall be piled with due regard to the stability of piles and in no case higher than 20 feet.

(2) Driveways between and around storage piles shall be at least 15 feet wide and maintained free from accumulation of rubbish, equipment, or other articles or materials. Driveways shall be so spaced that a maximum grid system unit of 50 feet by 150 feet is produced.

(3) The entire storage site shall be kept free from accumulation of unnecessary combustible materials. Weeds and grass shall be kept down and a regular procedure provided for the periodic cleanup of the entire area.

(4) When there is a danger of an underground fire, that land shall not be used for combustible or flammable storage.

(5) Method of piling shall be solid wherever possible and in orderly and regular piles. No combustible material shall be stored outdoors within 10 feet of a building or structure.

(6) Portable fire extinguishing equipment, suitable for the fire hazard involved, shall be provided at convenient, conspicuously accessible locations in the yard. Portable fire extinguishers, rated not less than 2A, shall be placed so that maximum travel distance to the nearest unit shall not exceed 100 feet.

(d) *Indoor storage.* (1) Storage shall not obstruct, or adversely affect, means of exit.

(2) All materials shall be stored, handled, and piled with due regard to their fire characteristics.

(3) Noncompatible materials, which may create a fire hazard, shall be segregated by a barrier having a fire resistance of at least 1 hour.

(4) Material shall be piled to minimize the spread of fire internally and to permit convenient access for firefighting. Stable piling shall be maintained at all times. Aisle space shall be maintained to safely accommodate the widest vehicle that may be used within the building for firefighting purposes.

(5) Clearance of at least 36 inches shall be maintained between the top level of the stored material and the sprinkler deflectors.

(6) Clearance shall be maintained around lights and heating units to prevent ignition of combustible materials.

(7) A clearance of 24 inches shall be maintained around the path of travel of fire doors unless a barricade is provided, in which case no clearance is needed. Material shall not be stored within 36 inches of a fire door opening.

§ 1518.153 Flammable and combustible liquids.

(a) *General requirements.* (1) Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids. Approved metal safety cans shall be used for the handling and use of flammable liquids in quantities greater than one gallon, except that this shall not apply to those flammable liquid materials which are highly viscid (extremely hard to pour), which may be used and handled in original shipping containers. For quantities of one gallon or less, only the original container or approved metal safety cans shall be used for storage, use, and handling of flammable liquids.

(2) Flammable or combustible liquids shall not be stored in areas used for exists, stairways, or normally used for the safe passage of people.

(b) *Indoor storage of flammable and combustible liquids.* (1) No more than 15 gallons of flammable or combustible liquids shall be stored in a room outside of an approved storage cabinet.

(2) Quantities of flammable and combustible liquid in excess of 15 gallons shall be stored in an acceptable or approved cabinet meeting the following requirements:

(i) Acceptable wooden storage cabinets shall be constructed in the following manner, or equivalent: The bottom, sides, and top shall be constructed of an exterior grade of plywood at least 1 inch in thickness, which shall not break down or delaminate under standard fire test conditions. All joints shall be rabbeted and shall be fastened in two directions with flathead wood screws. When more than one door is used, there shall be a rabbeted overlap of not less than 1 inch. Hinges shall be mounted in such a manner as to not lose their holding capacity due to loosening or burning out of the screws when subjected to fire. Such cabinets shall be painted inside and out with fire retardant paint.

(ii) Approved metal storage cabinets will be acceptable.

(iii) Cabinets shall be labeled in conspicuous lettering, "Flammable—Keep Fire Away."

(3) Not more than 60 gallons of flammable or 120 gallons of combustible liquids shall be stored in any one storage cabinet. Not more than three such cabinets may be located in a single storage area. Quantities in excess of this shall be stored in an inside storage room.

(4) (i) Inside storage rooms shall be constructed to meet the required fire-resistive rating for their use. Such construction shall comply with the test specifications set forth in Standard Methods of Fire Test of Building Construction and Material, NFPA 251–1969

(ii) Where an automatic extinguishing system is provided, the system shall be designed and installed in an approved manner. Openings to other rooms or buildings shall be provided with noncombustible liquid-tight raised sills or ramps at least 4 inches in height, or the floor in the storage area shall be at least 4 inches below the surrounding floor. Openings shall be provided with approved self-closing fire doors. The room shall be liquid-tight where the walls join the floor. A permissible alternate to the sill or ramp is an open-grated trench, inside of the room, which drains to a safe location. Where other portions of the building or other buildings are exposed, windows shall be protected as set forth in the Standard for Fire Doors and Windows, NFPA No. 80–1970, for Class E or F openings. Wood of at least 1-inch nominal thickness may be used for shelving, racks, dunnage, scuffboards, floor overlay, and similar installations.

(iii) Materials which will react with water shall not be stored in the same room with flammable or combustible liquids.

(iv) Storage in inside storage rooms shall comply with Table F–2 following:

TABLE F–2

Fire protection provided	Fire resistance	Maximum size	Total allowable quantities gals./sq. ft./ floor area
Yes	2 hrs	500 sq. ft	10
No	2 hrs	500 sq. ft	4
Yes	1 hr	150 sq. ft	5
No	1 hr	150 sq. ft	2

NOTE: Fire protection system shall be sprinkler, water spray, carbon dioxide or other system approved by a nationally recognized testing laboratory for this purpose.

(v) Electrical wiring and equipment located in inside storage rooms shall be approved for Class 1, Division 1, Hazardous Locations. For definition of Class 1, Division 1, Hazardous Locations, see § 1518.404.

(vi) Every inside storage room shall be provided with either a gravity or a mechanical exhausting system. Such system shall be designed to provide for a complete change of air within the room at least 6 times per hour. If a mechanical exhausting system is used, it shall be controlled by a switch located outside of the door. The ventilating equipment and any lighting fixtures shall be operated by the same switch. An electric pilot light shall be installed adjacent to the switch if flammable liquids are dispensed within the room. Where gravity ventilation is provided, the fresh air intake, as well as the exhausting outlet from the room, shall be on the exterior of the building in which the room is located.

(vii) In every inside storage room there shall be maintained one clear aisle at least 3 feet wide. Containers over 30 gallons capacity shall not be stacked one upon the other.

(viii) Flammable and combustible liquids in excess of that permitted in inside storage rooms shall be stored outside of buildings in accordance with paragraph (c) of this section.

(c) *Storage outside buildings.* (1) Storage of containers (not more than 60 gallons each) shall not exceed 1,100 gallons in any one pile or area. Piles or groups of containers shall be separated by a 5-foot clearance. Piles or groups of containers shall not be nearer than 20 feet to a building.

(2) Within 200 feet of each pile of containers, there shall be a 12-foot-wide access way to permit approach of fire control apparatus.

(3) The storage area shall be graded in a manner to divert possible spills away from buildings or other exposures, or shall be surrounded by a curb or earth dike at least 12 inches high. When curbs or dikes are used, provisions shall be made for draining off accumulations of ground or rain water, or spills of flammable or combustible liquids. Drains shall terminate at a safe location and shall be accessible to operation under fire conditions.

(4) Outdoor portable tank storage: (i) Portable tanks shall not be nearer than 20 feet from any building. Two or more portable tanks, grouped together, having a combined capacity in excess of 2,200 gallons, shall be separated by a 5-foot-clear area. Individual portable tanks exceeding 1,100 gallons shall be separated by a 5-foot-clear area.

(ii) Within 200 feet of each portable tank, there shall be a 12-foot-wide access way to permit approach of fire control apparatus.

(5) Storage areas shall be kept free of weeds, debris, and other combustible material not necessary to the storage.

(6) Portable tanks, not exceeding 660 gallons, shall be provided with emergency venting and other devices, as required by chapters III and IV of NFPA 30–1969, The Flammable and Combustible Liquids Code.

(7) Portable tanks, in excess of 660 gallons, shall have emergency venting and other devices, as required by chapters II and III of The Flammable and Combustible Liquids Code, NFPA 30–1969.

(d) *Fire control for flammable or combustible liquid storage.* (1) At least one portable fire extinguisher, having a rating of not less than 20–B units, shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage of more than 60 gallons of flammable or combustible liquids.

(2) At least one portable fire extinguisher having a rating of not less than 20–B units shall be located not less than 25 feet, nor more than 75 feet, from any flammable liquid storage area located outside.

(3) When sprinklers are provided, they shall be installed in accordance with the Standard for the Installation of Sprinkler Systems, NFPA 13–1969.

(4) At least one portable fire extinguisher having a rating of not less than 20–B:C units shall be provided on all tank trucks or other vehicles used for transporting and/or dispensing flammable or combustible liquids.

(e) *Dispensing liquids.* (1) Areas in which flammable or combustile liquids are transferred at one time, in quantities greater than 5 gallons from one tank or container to another tank or container, shall be separated from other operations by 25-feet distance or by construction having a fire resistance of at least 1 hour. Drainage or other means shall be provided to control spills. Adequate natural or mechanical ventilation shall be provided to maintain the concentration of flammable vapor at or below 10 percent of the lower flammable limit.

(2) Transfer or flammable liquids from one container to another shall be done only when containers are electrically interconnected (bonded).

(3) Flammable or combustible liquids shall be drawn from or transferred into vessels, containers, or portable tanks within a building or outside only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container, or portable tanks, by gravity or pump, through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks is prohibited.

(4) The dispensing units shall be protected against collision damage.

(5) Dispensing devices and nozzles for flammable liquids shall be of an approved type.

(f) *Handling liquids at point of final use.* (1) Flammable liquids shall be kept in closed containers when not actually in use.

(2) Leakage or spillage of flammable or combustible liquids shall be disposed of promptly and safely.

(3) Flammable liquids may be used only where there are no open flames or other sources of ignition within 50 feet of the operation, unless conditions warrant greater clearance.

(g) *Service and refueling areas.* (1) Flammable or combustible liquids shall be stored in approved closed containers, in tanks located underground, or in aboveground portable tanks.

(2) The tank trucks shall comply with the requirements covered in the Standard for Tank Vehicles for Flammable and Combustible Liquids, NFPA No. 385–1966.

(3) The dispensing hose shall be an approved type.

(4) The dispensing nozzle shall be an approved automatic-closing type without a latch-open device.

(5) Underground tanks shall not be abandoned.

(6) Clearly identified and easily accessible switch(es) shall be provided at a location remote from dispensing devices to shut off the power to all dispensing devices in the event of an emergency.

(7) (i) Heating equipment of an approved type may be installed in the lubrication or service area where there is no dispensing or transferring of flammable

liquids, provided the bottom of the heating unit is at least 18 inches above the floor and is protected from physical damage.

(ii) Heating equipment installed in lubrication or service areas, where flammable liquids are dispensed, shall be of an approved type for garages, and shall be installed at least 8 feet above the floor.

(8) There shall be no smoking or open flames in the areas used for fueling, servicing fuel systems for internal combustion engines, receiving or dispensing of flammable or combustible liquids.

(9) Conspicuous and legible signs prohibiting smoking shall be posted.

(10) The motors of all equipment being fueled shall be shut off during the fueling operation.

(11) Each service or fueling area shall be provided with at least one fire extinguisher having a rating of not less than 20BC located so that an extinguisher will be within 75 feet of each pump, dispenser, underground fill pipe opening, and lubrication or service area.

§ 1518.154 Liquefied petroleum gas (LP-Gas).

(a) *Approval of equipment and systems.* (1) Each system shall have containers, valves, connectors, manifold valve assemblies, and regulators of an approved type.

(b) *Welding on LP-Gas containers.* Welding is prohibited on containers.

(c) *Container valves and container accessories.* (1) Valves, fittings, and accessories connected directly to the container, including primary shut off valves, shall have a rated working pressure of at least 250 p.s.i.g. and shall be of material and design suitable for LP-Gas service.

(2) Connections to containers, except safety relief connections, liquid level gauging devices, and plugged openings, shall have shutoff valves located as close to the container as practicable.

(d) *Safety devices.* (1) Every container and every vaporizer shall be provided with one or more approved safety relief valves or devices. These valves shall be arranged to afford free vent to the outer air with discharge not less than 5 feet horizontally away from any opening into a building which is below such discharge.

(2) Shutoff valves shall not be installed between the safety relief device and the container, or the equipment or piping to which the safety relief device is connected, except that a shutoff valve may be used where the arrangement of this valve is such that full required capacity flow through the safety relief device is always afforded.

(3) Container safety relief devices and regulator relief vents shall be located not less than 5 feet in any direction from air openings into sealed combustion system appliances or mechanical ventilation air intakes.

(e) *Dispensing.* (1) Filling of fuel containers for trucks or motor vehicles from bulk storage containers shall be performed not less than 10 feet from the nearest masonry-walled building, or not less than 25 feet from the nearest building or other construction and, in any event, not less than 25 feet from any building opening.

(2) Filling of portable containers or containers mounted on skids from storage containers shall be performed not less than 50 feet from the nearest building.

(f) *Requirements for appliances.* (1) LP-Gas consuming appliances shall be approved types.

(2) Any appliance that was originally manufactured for operation with a gaseous fuel other than LP-Gas, and is in good condition, may be used with LP-Gas only after it is properly converted, adapted, and tested for performance with LP-Gas before the appliance is placed in use.

(g) *Containers and regulating equipment installed outside of buildings or structures.* Containers shall be upright upon firm foundations or otherwise firmly secured. The possible effect on the outlet piping of settling shall be guarded against by a flexible connection or special fitting.

(h) *Containers and equipment used inside of buildings or structures.* (1) When operational requirements make portable use of containers necessary, and their location outside of buildings or structures is impracticable, containers and equipment shall be permitted to be used inside of buildings or structures in accordance with subparagraphs (2) through (11) of this paragraph.

(2) "Containers in use" means connected for use.

(3) Systems utilizing containers having a water capacity greater than 2½ pounds (nominal 1 pound LP-Gas capacity) shall be equipped with excess flow valves. Such excess flow valves shall be either integral with the container valves or in the connections to the container valve outlets.

(4) Regulators, if used, shall be either directly connected to the container valves or to manifolds connected to the container valves. The regulator shall be suitable for use with LP-Gas. Manifolds and fittings connecting containers to pressure regulator inlets shall be designed for at least 250 p.s.i.g. service pressure.

(5) Valves on containers having water capacity greater than 50 pounds (nominal 20 pounds LP-Gas capacity) shall be protected from damage while in use or storage.

(6) Aluminum piping or tubing shall not be used.

(7) Hose shall be designed for a working pressure of at least 250 p.s.i.g. Design, construction, and performance of hose, and hose connections shall have their suitability determined by listing by a nationally recognized testing agency. The hose length shall be as short as practicable. Hoses shall be long enough to permit compliance with spacing provisions of subparagraphs (1)–(13) of this paragraph, without kinking or straining, or causing hose to be so close to a burner as to be damaged by heat.

(8) Portable heaters, including salamanders, shall be equipped with an approved automatic device to shut off the flow of gas to the main burner, and pilot if used, in the event of flame failure. Such heaters, having inputs above 50,000 B.t.u. per hour, shall be equipped with either a pilot, which must be lighted and proved before the main burner can be turned on, or an electrical ignition system. NOTE: The provisions of this subparagraph do not aply to portable heaters under 7,50 B.t.u. per hour input when used with containers having a maximum water capacity of 2½ pounds.

(9) Container valves, connectors, regulators, manifolds, piping, and tubing shall not be used as structural supports for heaters.

(10) Containers, regulating equipment, manifolds, pipe, tubing, and hose shall be located to minimize exposure to high temperatures or physical damage.

(11) Containers having a water capacity greater than 2½ pounds (nominal 1 pound LP-Gas capacity) connected for use shall stand on a firm and substantially level surface and, when necessary, shall be secured in an upright position.

(12) The maximum water capacity of individual containers shall be 245 pounds (nominal 100 pounds LP-Gas capacity).

(13) For temporary heating, heaters (other than integral heater-container units) shall be located at least 6 feet from any LP-Gas container. This shall not prohibit the use of heaters specifically designed for attachment to the container or to a supporting standard, provided they are designed and installed so as to prevent direct or radiant heat application from the heater onto the containers. Blower and radiant type heaters shall not be directed toward any LP-Gas container within 20 feet.

(14) If two or more heater-container units, of either the integral or nonintegral type, are located in an unpartitioned area on the same floor, the container or containers of each unit shall be separated from the container or containers of any other unit by at least 20 feet.

(15) When heaters are connected to containers for use in an unpartitioned area on the same floor, the total water capacity of containers, manifolded together for connection to a heater or heaters, shall not be greater than 735 pounds (nominal 300 pounds LP-Gas capacity). Such manifolds shall be separated by at least 20 feet.

(16) Storage of containers awaiting use shall be in accordance with paragraphs (j) and (k) of this section.

(i) *Container valves and accessories.* (1) Valves in the assembly of multiple container systems shall be arranged so that replacement of containers can be made without shutting off the flow of gas in the system. This provision is not to be construed as requiring an automatic changeover device.

(2) Heaters shall be equipped with an approved regulator in the supply line between the fuel cylinder and the heater unit. Cylinder connectors shall be provided with an excess flow valve to minimize the flow of gas in the event the fuel line becomes ruptured.

(3) Regulators and low-pressure relief devices shall be rigidly attached to the cylinder valves, cylinders, supporting standards, the building walls, or otherwise rigidly secured, and shall be so installed or protected from the elements.

(j) *Storage of LPG containers.* Storage of LPG within buildings is prohibited.

(k) *Storage outside of buildings.* (1) Storage outside of buildings, for containers awaiting use, shall be located from the nearest building or group of buildings, in accordance with the following:

TABLE F-3

Quantity of LP-Gas stored:	Distance (feet)
500 lbs. or less	0
501 to 6,000 lbs	10
6,001 to 10,000 lbs	20
Over 10,000 lbs	25

(2) Containers shall be in a suitable enclosure or otherwise protected against tampering.

(l) *Fire protection.* Storage locations shall be provided with at least one approved portable fire extinguisher having a rating of not less than 20-B:C.

§ 1518.155 Temporary heating devices.

(a) *Ventilation.* (1) Fresh air shall be supplied in sufficient quantities to maintain the health and safety of workmen. Where natural means of fresh air supply is inadequate, mechanical ventilation shall be provided.

(2) When heaters are used in confined spaces, special care shall be taken to provide sufficient ventilation in order to ensure proper combustion, maintain the health and safety of workmen, and limit temperature rise in the area.

(b) *Clearance and mounting.* (1) Temporary heating devices shall be installed to provide clearance to combustible material not less than the amount shown in Table F-4.

(2) Temporary heating devices, which are listed for installation with lesser clearances than specified in Table F-4, may be installed in accordance with their approval.

TABLE F-4

Heating appliances	Minimum clearance, (inches)		
	Sides	Rear	Chimney connector
Room heater, circulating type	12	12	18
Room heater, radiant type	36	36	18

(3) Heaters not suitable for use on wood floors shall not be set directly upon them or other combustible materials. When such heaters are used, they shall rest on suitable heat insulating material or at least 1-inch concrete, or equivalent. The insulating material shall extend beyond the heater 2 feet or more in all directions.

(4) Heaters used in the vicinity of tarpaulins, canvas, or similar coverings shall be located at least 10 feet from the coverings. The coverings shall be securely fastened to prevent ignition or upsetting of the heater due to wind action on the covering or other material.

(c) *Stability.* Heaters, when in use, shall be set horizontally level, unless otherwise permitted by the manufacturer's markings.

(d) *Solid fuel heaters.* Solid fuel heaters are prohibited.

(e) *Flammable liquid-fired heaters.* (1) Flammable liquid-fired heaters shall be equipped with a primary safety control to stop the flow of fuel in the event of flame failure. Barometric or gravity oil feed shall not be considered a primary safety control.

(2) Heaters designed for barometric or gravity oil feed shall be used only with the integral tanks.

(3) Heaters which are not designed for flue connection shall be equipped with integral tanks having capacity of not more than 2 gallons.

(4) Heaters specifically designed and approved for use with separate supply tanks may be directly connected for gravity feed, or an automatic pump, from a supply tank.

Subpart G—Signs, Signals, and Barricades

§ 1518.200 Accident prevention signs and tags.

(a) *General.* Signs and symbols required by this subpart shall be visible at all times when work is being performed, and shall be removed or covered promptly when the hazards no longer exist.

(b) *Danger signs.* (1) Danger signs (see Figure G-1) shall be used only where an immediate hazard exists.

(2) Danger signs shall have red as the predominating color for the upper panel; black outline on the borders; and a white lower panel for additional sign wording.

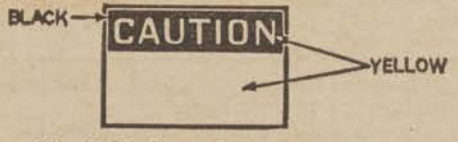
(c) *Caution signs.* (1) Caution signs (see Figure G-2) shall be used only to warn against potential hazards or to caution against unsafe practices.

(2) Caution signs shall have yellow as the predominating color; black upper panel and borders; yellow lettering of "caution" on the black panel; and the lower yellow panel for additional sign wording. Black lettering shall be used for additional wording.

Figure G-1



Figure G-2



(d) *Exit signs.* Exit signs, when required, shall be lettered in legible red letters, not less than 6 inches high, on a white field and the principal stroke of the letters shall be at least three-fourths inch in width.

(e) *Safety instruction signs.* Safety instruction signs, when used, shall be white with green upper panel with white letters to convey the principal message. Any additional wording on the sign shall be black letters on the white background.

(f) *Directional signs.* Directional signs, other than automotive traffic signs specified in paragraph (h) of this section, shall be white with a black panel and a white directional symbol. Any additional wording on the sign shall be black letters on the white background.

(h) *Traffic signs.* (1) Construction areas shall be posted with legible traffic signs at points of hazard to provide warning to equipment operators and workmen using roadways.

(2) All traffic control signs or devices used for protection of construction workmen shall conform to American National Standards Institute D6.1–1961, Manual on Uniform Traffic Control Devices for Streets and Highways.

§ 1518.201 Signaling.

(a) *Flagmen.* (1) When operations are such that signs, signals, and barricades do not provide the necessary protection on or adjacent to a highway, flagmen or other appropriate traffic controls shall be provided.

(2) Signaling directions by flagmen shall conform to American National Standards Institute D6.1–1961, Manual on Uniform Traffic Control Devices for Streets and Highways.

(3) Hand signaling by flagmen shall be by use of red flags at least 18 inches square, sign paddles, and in periods of darkness, red lights.

(4) Flagmen shall be provided with and shall wear a red or orange warning garment while flagging. Warning garments worn at night shall be of reflectorized material.

(b) *Crane and hoist signals.* Regulations for crane and hoist signaling will be found in applicable American National Standards Institute standards.

§ 1518.202 Barricades.

(a) All uncovered openings and excavations in places accessible to vehicular or pedestrian traffic shall be provided with barricades to protect employees from these hazards.

(b) Warning lights or flares shall be displayed if work is being done at night.

Subpart H—Materials Handling, Storage, Use, and Disposal

§ 1518.250 General requirements for storage.

(a) *General.* (1) All materials stored in tiers shall be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling or collapse.

(2) Maximum safe load limits of floors within buildings and structures, in pounds per square foot, shall be conspicuously posted in all storage areas. Maximum safe loads shall not be exceeded.

(3) Aisles and passageways shall be kept clear to provide for the free and safe

movement of material handling equipment or employees. Such areas shall be kept in good repair.

(4) When a difference in road or working levels exist, means such as ramps, blocking, or grading shall be used to ensure the safe movement of vehicles between the two levels.

(b) *Material storage.* (1) Material stored inside buildings under construction shall not be placed within 6 feet of any hoistway or inside floor openings, nor within 10 feet of an exterior wall which does not extend above the top of the material stored.

(2) Employees required to work on stored material in silos, hoppers, tanks, and similar storage areas shall be equipped with lifelines and safety belts meeting the requirements o' Subpart E of this part.

(3) Noncompatible materials shall be segregated in storage.

(4) Bagged materials shall be stacked by stepping back the layers and cross-keying the bags at least every 10 bags high.

(5) Materials shall not be stored on scaffolds or runways in excess of supplies needed for immediate operations.

(6) Brick stacks shall not be more than 7 feet in height. When a loose brick stack reaches a height of 4 feet, it shall be tapered back 2 inches in every foot of height above the 4-foot level.

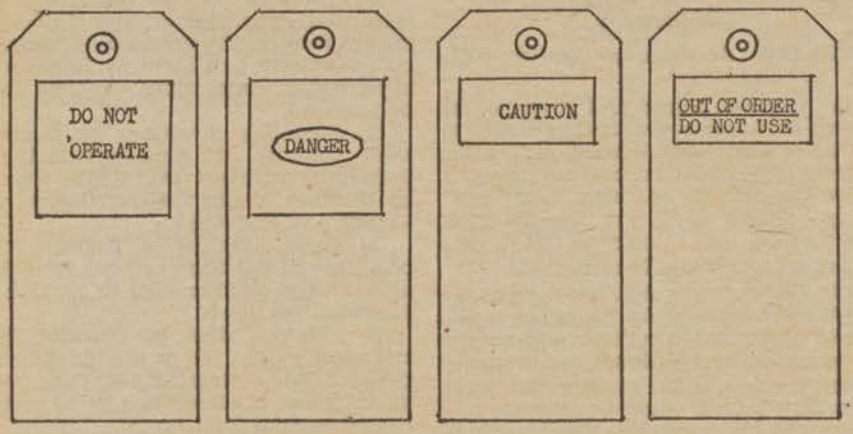
(7) When masonry blocks are stacked higher than 6 feet, the stack shall be tapered back one-half block per tier above the 6-foot level.

(8) Lumber. (i) Used lumber shall have all nails withdrawn before stacking for storage.

(g) *Accident prevention tags.* (1) Accident prevention tags shall be used as a temporary means of warning employees of an existing hazard. They shall not be used in place of, or as a substitute for, accident prevention signs.

(2) Specifications for accident prevention tags shall be as follows in Table G–1:

Table G-1



White tag – White letters on red square

White tag – White letters on red oval with a black square

Yellow tag – Yellow letters on a black background

White tag – White letters on black background

Basic Stock (Background)	Safety Colors (Ink)	Copy Specification (Letters)
White	Red	Do Not Operate
White	Black and Red	Danger
Yellow	Black	Caution
White	Black	Out of Order Do Not Use

(ii) Lumber shall be stacked on level and solidly supported sills.

(iii) Lumber shall be so stacked as to be stable and self-supporting.

(iv) Lumber piles shall not exceed 20 feet in height provided that lumber to be handled manually shall not be stacked more than 16 feet high.

(9) Structural steel, poles, pipe, bar stock, and other cylindrical materials, unless racked, shall be stacked and blocked so as to prevent spreading or tilting.

§ 1518.251 Rigging equipment for material handling.

(a) *General.* (1) Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to ensure that it is safe. Defective rigging equipment shall be removed from service.

(2) Rigging equipment shall not be loaded in excess of its recommended safe working load, as prescribed in the tables that follow for the specific equipment.

(3) Rigging equipment, when not in use, shall be removed from the immediate work area so as not to present a hazard to employees.

(b) *Alloy steel chains.* (1) Welded alloy steel chain slings shall have permanently affixed durable identification stating size, grade, rated capacity, and sling manufacturer.

(2) Hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments, when used with alloy steel chains, shall have a rated capacity at least equal to that of the chain.

(3) Job or shop hooks and links, or makeshift fasteners, formed from bolts, rods, etc., or other such attachments, shall not be used.

(4) Rated capacity (working load limit) for alloy steel chain slings shall conform to the values shown in Table H–1.

(5) Whenever wear at any point of any chain link exceeds that shown in Table H–2, the assembly shall be removed from service.

(c) *Wire rope.* (1) Tables H–3 through H–14 shall be used to determine the safe working loads of various sizes and classifications of improved plow steel wire rope and wire rope slings with various types of terminals. For sizes, classifications, and grades not included in these tables, the safe working load recommended by the manufacturer for specific, identifiable products shall be followed, provided that a safety factor of not less than 5 is maintained.

(2) Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

(3) Wire rope shall not be secured by knots, except on haul back lines on scrapers.

(4) The following limitations shall apply to the use of wire rope:

(i) An eye splice made in any wire rope shall have not less than three full tucks. However, this requirement shall not operate to preclude the use of another form of splice or connection which can be shown to be as efficient and which is not otherwise prohibited.

(ii) Except for eye splices in the ends of wires and for endless rope slings, each wire rope used in hoisting or lowering, or in pulling loads, shall consist of one continuous piece without knot or splice.

(iii) Eyes in wire rope bridles, slings, or bull wires shall not be formed by wire rope clips or knots.

(iv) Wire rope shall not be used if, in any length of eight diameters, the total number of visible broken wires exceeds 10 percent of the total number of wires,

or if the rope shows other signs of excessive wear, corrosion, or defect.

(5) When U-bolt wire rope clips are used to form eyes, Table H–20 shall be used to determine the number and spacing of clips.

(i) When used for eye splices, the U-bolt shall be applied so that the "U" section is in contact with the dead end of the rope.

(d) *Natural rope, and synthetic fiber*— (1) *General.* When using natural or synthetic fiber rope slings, Tables H–15, 16, 17, and 18 shall apply.

(2) All splices in rope slings provided by the employer shall be made in accordance with fiber rope manufacturers' recommendations.

(i) In manila rope, eye splices shall contain at least three full tucks, and short splices shall contain at least six full tucks (three on each side of the centerline of the splice).

(ii) In layed synthetic fiber rope, eye splices shall contain at least four full tucks, and short splices shall contain at least eight full tucks (four on each side of the centerline of the splice).

(iii) Strand end tails shall not be trimmed short (flush with the surface of the rope) immediately adjacent to the full tucks. This precaution applies to both eye and short splices and all types of fiber rope. For fiber ropes under 1-inch diameter, the tails shall project at least six rope diameters beyond the last full tuck. For fiber ropes 1-inch diameter and larger, the tails shall project at least 6 inches beyond the last full tuck. In applications where the projecting tails may be objectionable, the tails shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).

(iv) For all eye splices, the eye shall be sufficiently large to provide an included angle of not greater than 60° at the splice when the eye is placed over the load or support.

(v) Knots shall not be used in lieu of splices.

(e) *Synthetic webbing (nylon, polyester, and polypropylene).* (1) The employer shall have each synthetic web sling marked or coded to show:

(i) Name or trademark of manufacturer.

(ii) Rated capacities for the type of hitch.

(iii) Type of material.

(2) Rated capacity shall not be exceeded.

(f) *Shackles and hooks.* (1) Table H–19 shall be used to determine the safe working loads of various sizes of shackles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than 5 is maintained.

(2) The manufacturer's recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer's recommendations are available shall be tested to twice the intended safe working load before they are initially put into use. The employer shall maintain a record of the dates and results of such tests.

§ 1518.252 Disposal of waste materials.

(a) Whenever materials are dropped to any point lying outside the exterior walls of the building, an enclosed chute of wood, or equivalent material, shall be used.

(b) When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped shall be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs warning of the hazard of falling materials shall be posted at each level. Removal shall not be permitted in this lower area until debris handling ceases above.

(c) All scrap lumber, waste material, and rubbish shall be removed from the immediate work area as the work progresses.

(d) Disposal of waste material or debris by burning shall comply with local fire regulations.

(e) All solvent waste, oily rags, and flammable liquids shall be kept in fire resistant covered containers until removed from worksite.

Table H-1

RATED CAPACITY (WORKING LOAD LIMIT), FOR ALLOY STEEL CHAIN SLINGS*
RATED CAPACITY (WORKING LOAD LIMIT), POUNDS

Chain Size, Inches	Single Branch Sling — 90 degree Loading	Double Sling Vertical Angle (1) 30 degree / 45 degree / 60 degree Horizontal Angle (2) 60 degree / 45 degree / 30 degree			Triple and Quadruple Sling Vertical Angle (1) 30 degree / 45 degree / 60 degree Horizontal Angle (2) 60 degree / 45 degree / 30 degree		
1/4	3,250	5,560	4,550	3,250	8,400	6,800	4,900
3/8	6,600	11,400	9,300	6,600	17,000	14,000	9,900
1/2	11,250	19,500	15,900	11,250	29,000	24,000	17,000
5/8	16,500	28,500	23,300	16,500	43,000	35,000	24,500
3/4	23,000	39,800	32,500	23,000	59,500	48,500	34,500
7/8	28,750	49,800	40,600	28,750	74,500	61,000	43,000
1	38,750	67,100	54,800	38,750	101,000	82,000	58,000
1-1/8	44,500	77,000	63,000	44,500	115,500	94,500	66,500
1-1/4	57,500	99,500	81,000	57,500	149,000	121,500	86,000
1-3/8	67,000	116,000	94,000	67,000	174,000	141,000	100,500
1-1/2	80,000	138,000	112,500	80,000	207,000	169,000	119,500
1-3/4	100,000	172,000	140,000	100,000	258,000	210,000	150,000

(1) Rating of multileg slings adjusted for angle of loading measured as the included angle between the inclined leg and the vertical as shown in Figure H–2

(2) Rating of multileg slings adjusted for angle of loading between the inclined leg and the horizontal plane of the load, as shown in Figure H–2

* Other grades of proof tested steel chain include Proof Coil, BBB Coil and Hi-Test Chain. These grades are not recommended for overhead lifting and therefore are not covered by this code.

TABLE H–2—MAXIMUM ALLOWABLE WEAR AT ANY POINT OF LINK

Chain size, inches	*Maximum allowable wear, inch*
1/4	3/64
3/8	5/64
1/2	7/64
5/8	9/64
3/4	5/32
7/8	11/64
1	3/16
1 1/8	7/32
1 1/4	1/4
1 3/8	9/32
1 1/2	5/16
1 3/4	11/32

Table H-3

RATED CAPACITIES FOR SINGLE LEG SLINGS
6 x 19 AND 6 x 37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE
WITH FIBER CORE (FC)

Rope Dia (Inches)	Rope Constr	Rated Capacities, Tons (2,000 lb) Vertical HT	Vertical MS	Vertical S	Choker HT	Choker MS	Choker S	Vertical Basket* HT	Vertical Basket* MS	Vertical Basket* S
1/4	6 x 19	0.49	0.51	0.55	0.37	0.38	0.41	0.99	1.0	1.1
5/16	6 x 19	0.76	0.79	0.85	0.57	0.59	0.64	1.5	1.6	1.7
3/8	6 x 19	1.1	1.1	1.2	0.80	0.85	0.91	2.1	2.2	2.4
7/16	6 x 19	1.4	1.5	1.6	1.1	1.1	1.2	2.9	3.0	3.3
1/2	6 x 19	1.8	2.0	2.1	1.4	1.5	1.6	3.7	3.9	4.3
9/16	6 x 19	2.3	2.5	2.7	1.7	1.9	2.0	4.6	5.0	5.4
5/8	6 x 19	2.8	3.1	3.3	2.1	2.3	2.5	5.6	6.2	6.7
3/4	6 x 19	3.9	4.4	4.8	2.9	3.3	3.6	7.8	8.8	9.5
7/8	6 x 19	5.1	5.9	6.4	3.9	4.5	4.8	10.0	12.0	13.0
1	6 x 19	6.7	7.7	8.4	5.0	5.8	6.3	13.0	15.0	17.0
1-1/8	6 x 19	8.4	9.5	10.0	6.3	7.1	7.9	17.0	19.0	21.0
1-1/4	6 x 37	9.8	11.0	12.0	7.4	8.3	9.2	20.0	22.0	25.0
1-3/8	6 x 37	12.0	13.0	15.0	8.9	10.0	11.0	24.0	27.0	30.0
1-1/2	6 x 37	14.0	16.0	17.0	10.0	12.0	13.0	28.0	32.0	35.0
1-5/8	6 x 37	16.0	18.0	21.0	12.0	14.0	15.0	33.0	37.0	41.0
1-3/4	6 x 37	19.0	21.0	24.0	14.0	16.0	18.0	38.0	43.0	48.0
2	6 x 37	25.0	28.0	31.0	18.0	21.0	23.0	49.0	55.0	62.0

HT = Hand Tucked Splice and Hidden Tuck Splice
For hidden tuck splice (IWRC) use values in HT columns.
MS = Mechanical Splice
S = Swaged or Zinc Poured Socket

*These values only apply when the D/d ratio for HT slings is 10 or greater, and for MS and S slings is 20 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of rope.

Table H-4
RATED CAPACITIES FOR SINGLE LEG SLINGS
6 x 19 AND 6 x 37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE
WITH INDEPENDENT WIRE ROPE CORE (IWRC)

Rope Dia (Inches)	Rope Constr	Rated Capacities, Tons (2,000 lb)								
		Vertical			Choker			Vertical Basket*		
		HT	MS	S	HT	MS	S	HT	MS	S
1/4	6 x 19	0.53	0.56	0.59	0.40	0.42	0.44	1.0	1.1	1.2
5/16	6 x 19	0.81	0.87	0.92	0.61	0.65	0.69	1.6	1.7	1.8
3/8	6 x 19	1.1	1.2	1.3	0.86	0.93	0.98	2.3	2.5	2.6
7/16	6 x 19	1.5	1.7	1.8	1.2	1.3	1.3	3.1	3.4	3.5
1/2	6 x 19	2.0	2.2	2.3	1.5	1.6	1.7	3.9	4.4	4.6
9/16	6 x 19	2.5	2.7	2.9	1.8	2.1	2.2	4.9	5.5	5.8
5/8	6 x 19	3.0	3.4	3.6	2.2	2.5	2.7	6.0	6.8	7.2
3/4	6 x 19	4.2	4.9	5.1	3.1	3.6	3.8	8.4	9.7	10.0
7/8	6 x 19	5.5	6.6	6.9	4.1	4.9	5.2	11.0	13.0	14.0
1	6 x 19	7.2	8.5	9.0	5.4	6.4	6.7	14.0	17.0	18.0
1-1/8	6 x 19	9.0	10.0	11.0	6.8	7.8	8.5	18.0	21.0	23.0
1-1/4	6 x 37	10.0	12.0	13.0	7.9	9.2	9.9	21.0	24.0	26.0
1-3/8	6 x 37	13.0	15.0	16.0	9.6	11.0	12.0	25.0	29.0	32.0
1-1/2	6 x 37	15.0	17.0	19.0	11.0	13.0	14.0	30.0	35.0	38.0
1-5/8	6 x 37	18.0	20.0	22.0	13.0	15.0	17.0	35.0	41.0	44.0
1-3/4	6 x 37	20.0	24.0	26.0	15.0	18.0	19.0	41.0	47.0	51.0
2	6 x 37	26.0	30.0	33.0	20.0	23.0	25.0	53.0	61.0	66.0

HT = Hand Tucked Splice
For hidden tuck splice (IWRC) use Table H-3 values in HT column.
MS = Mechanical Splice.
S = Swaged or Zinc Poured Socket.
*These values only apply when the D/d ratio for HT slings is 10 or greater, and for MS and S Slings is 20 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of rope.

Table H-5
RATED CAPACITIES FOR SINGLE LEG SLINGS
CABLE LAID ROPE – MECHANICAL SPLICE ONLY
7x7x7 & 7x7x19 CONSTRUCTIONS GALVANIZED AIRCRAFT GRADE ROPE
7x6x19 IWRC CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE

Rope		Rated Capacities, Tons (2,000 lb)		
Dia (Inches)	Constr	Vertical	Choker	Vertical Basket*
1/4	7x7x7	0.50	0.38	1.0
3/8	7x7x7	1.1	0.81	2.2
1/2	7x7x7	1.8	1.4	3.7
5/8	7x7x7	2.8	2.1	5.5
3/4	7x7x7	3.8	2.9	7.6
5/8	7x7x19	2.9	2.2	5.8
3/4	7x7x19	4.1	3.0	8.1
7/8	7x7x19	5.4	4.0	11.0
1	7x7x19	6.9	5.1	14.0
1-1/8	7x7x19	8.2	6.2	16.0
1-1/4	7x7x19	9.9	7.4	20.0
3/4	7x6x19 IWRC	3.8	2.8	7.6
7/8	7x6x19 IWRC	5.0	3.8	10.0
1	7x6x19 IWRC	6.4	4.8	13.0
1-1/8	7x6x19 IWRC	7.7	5.8	15.0
1-1/4	7x6x19 IWRC	9.2	6.9	18.0
1-5/16	7x6x19 IWRC	10.0	7.5	20.0
1-3/8	7x6x19 IWRC	11.0	8.2	22.0
1-1/2	7x6x19 IWRC	13.0	9.6	26.0

*These values only apply when the D/d ratio is 10 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of rope.

Table H-6
RATED CAPACITIES FOR SINGLE LEG SLINGS
8-PART AND 6-PART BRAIDED ROPE
6x7 AND 6x19 CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE
7x7 CONSTRUCTION GALVANIZED AIRCRAFT GRADE ROPE

Component Ropes		Rated Capacities, Tons (2,000 lb)					
Diameter (Inches)	Constr	Vertical		Choker		Basket Vertical to 30 degree*	
		8-Part	6-Part	8-Part	6-Part	8-Part	6-Part
3/32	6x7	0.42	0.32	0.32	0.24	0.74	0.55
1/8	6x7	0.76	0.57	0.57	0.42	1.3	0.98
3/16	6x7	1.7	1.3	1.3	0.94	2.9	2.2
3/32	7x7	0.51	0.39	0.38	0.29	0.89	0.67
1/8	7x7	0.95	0.71	0.71	0.53	1.6	1.2
3/16	7x7	2.1	1.5	1.5	1.2	3.6	2.7
3/16	6x19	1.7	1.3	1.3	0.98	3.0	2.2
1/4	6x19	3.1	2.3	2.3	1.7	5.3	4.0
5/16	6x19	4.8	3.6	3.6	2.7	8.3	6.2
3/8	6x19	6.8	5.1	5.1	3.8	12.0	8.9
7/16	6x19	9.3	6.9	6.9	5.2	16.0	12.0
1/2	6x19	12.0	9.0	9.0	6.7	21.0	15.0
9/16	6x19	15.0	11.0	11.0	8.5	26.0	20.0
5/8	6x19	19.0	14.0	14.0	10.0	32.0	24.0
3/4	6x19	27.0	20.0	20.0	15.0	46.0	35.0
7/8	6x19	36.0	27.0	27.0	20.0	62.0	47.0
1	6x19	47.0	35.0	35.0	26.0	81.0	61.0

*These values only apply when the D/d ratio is 20 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of component rope.

Table H-7
RATED CAPACITIES FOR 2-LEG & 3-LEG BRIDLE SLINGS
6 x 19 AND 6 x 37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE
WITH FIBER CORE (FC)

Rope		Rated Capacities, Tons (2,000 lb)											
		2-Leg Bridle Slings						3-Leg Bridle Slings					
Dia (Inches)	Constr	Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree		Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		HT	MS	HT	MS	HT	MS	HT	MS	HT	MS	HT	MS
1/4	6 x 19	0.85	0.88	0.70	0.72	0.49	0.51	1.3	1.3	1.0	1.1	0.74	0.7
5/16	6 x 19	1.3	1.4	1.1	1.1	0.76	0.79	2.0	2.0	1.6	1.7	1.1	1.2
3/8	6 x 19	1.8	1.9	1.5	1.6	1.1	1.1	2.8	2.9	2.3	2.4	1.6	1.7
7/16	6 x 19	2.5	2.6	2.0	2.2	1.4	1.5	3.7	4.0	3.0	3.2	2.1	2.3
1/2	6 x 19	3.2	3.4	2.6	2.8	1.8	2.0	4.8	5.1	3.9	4.2	2.8	3.0
9/16	6 x 19	4.0	4.3	3.2	3.5	2.3	2.5	6.0	6.5	4.9	5.3	3.4	3.7
5/8	6 x 19	4.8	5.3	4.0	4.4	2.8	3.1	7.3	8.0	5.9	6.5	4.2	4.6
3/4	6 x 19	6.8	7.6	5.5	6.2	3.9	4.4	10.0	11.0	8.3	9.3	5.8	6.6
7/8	6 x 19	8.9	10.0	7.3	8.4	5.1	5.9	13.0	15.0	11.0	13.0	7.7	8.9
1	6 x 19	11.0	13.0	9.4	11.0	6.7	7.7	17.0	20.0	14.0	16.0	10.0	11.0
1-1/8	6 x 19	14.0	16.0	12.0	13.0	8.4	9.5	22.0	24.0	18.0	20.0	13.0	14.0
1-1/4	6 x 37	17.0	19.0	14.0	16.0	9.8	11.0	25.0	29.0	21.0	23.0	15.0	17.0
1-3/8	6 x 37	20.0	23.0	17.0	19.0	12.0	13.0	31.0	35.0	25.0	28.0	18.0	20.0
1-1/2	6 x 37	24.0	27.0	20.0	22.0	14.0	16.0	36.0	41.0	30.0	33.0	21.0	24.0
1-5/8	6 x 37	28.0	32.0	23.0	26.0	16.0	18.0	43.0	48.0	35.0	39.0	25.0	28.0
1-3/4	6 x 37	33.0	37.0	27.0	30.0	19.0	21.0	49.0	56.0	40.0	45.0	28.0	32.0
2	6 x 37	43.0	48.0	35.0	39.0	25.0	28.0	64.0	72.0	52.0	59.0	37.0	41.0

HT = Hand Tucked Splice.
MS = Mechanical Splice

Table H-8
RATED CAPACITIES FOR 2-LEG & 3-LEG BRIDLE SLINGS
6 x 19 and 6 x 37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE
WITH INDEPENDENT WIRE ROPE CORE (IWRC)

Rope		Rated Capacities, Tons (2,000 lb)											
		2-Leg Bridle Sling						3-Leg Bridle Sling					
		Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree		Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
Dia (Inches)	Constr	HT	MS	HT	MS	HT	MS	HT	MS	HT	MS	HT	MS
1/4	6 x 19	0.92	0.97	0.75	0.79	0.53	0.56	1.4	1.4	1.1	1.2	0.79	0.84
5/16	6 x 19	1.4	1.5	1.1	1.2	1.81	0.87	2.1	2.3	1.7	1.8	1.2	1.3
3/8	6 x 19	2.0	2.1	1.6	1.8	1.1	1.2	3.0	3.2	2.4	2.6	1.7	1.9
7/16	6 x 19	2.7	2.9	2.2	2.4	1.5	1.7	4.0	4.4	3.3	3.6	2.3	2.5
1/2	6 x 19	3.4	3.8	2.8	3.1	2.0	2.2	5.1	5.7	4.2	4.6	3.0	3.3
9/16	6 x 19	4.3	4.8	3.5	3.9	2.5	2.7	6.4	7.1	5.2	5.8	3.7	4.1
5/8	6 x 19	5.2	5.9	4.2	4.8	3.0	3.4	7.8	8.8	6.4	7.2	4.5	5.1
3/4	6 x 19	7.3	8.4	5.9	6.9	4.2	4.9	11.0	13.0	8.9	10.0	6.3	7.3
7/8	6 x 19	9.6	11.0	7.8	9.3	5.5	6.6	14.0	17.0	12.0	14.0	8.3	9.9
1	6 x 19	12.0	15.0	10.0	12.0	7.2	8.5	19.0	22.0	15.0	18.0	11.0	13.0
1-1/8	6 x 19	16.0	18.0	13.0	15.0	9.0	10.0	23.0	27.0	19.0	22.0	13.0	16.0
1-1/4	6 x 37	18.0	21.0	15.0	17.0	10.0	12.0	27.0	32.0	22.0	26.0	16.0	18.0
1-3/8	6 x 37	22.0	25.0	18.0	21.0	13.0	15.0	33.0	38.0	27.0	31.0	19.0	22.0
1-1/2	6 x 37	26.0	30.0	21.0	25.0	15.0	17.0	39.0	45.0	32.0	37.0	23.0	26.0
1-5/8	6 x 37	31.0	35.0	25.0	29.0	18.0	20.0	46.0	53.0	38.0	43.0	27.0	31.0
1-3/4	6 x 37	35.0	41.0	29.0	33.0	20.0	24.0	53.0	61.0	43.0	50.0	31.0	35.0
2	6 x 37	46.0	53.0	37.0	43.0	26.0	30.0	68.0	79.0	56.0	65.0	40.0	46.0

HT = Hand Tucked Splice
MS = Mechanical Splice

Table H-9
RATED CAPACITIES FOR 2-LEG & 3-LEG BRIDLE SLINGS
CABLE LAID ROPE – MECHANICAL SPLICE ONLY
7 x 7 x 7 AND 7 x 7 x 19 CONSTRUCTIONS GALVANIZED AIRCRAFT GRADE ROPE
7 x 6 x 19 IWRC CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE

Rope		Rated Capacities, Tons (2,000 lb)					
		2-Leg Bridle Sling			3-Leg Bridle Sling		
Dia (Inches)	Constr	Vert 30 deg Horz 60 deg	45 degree Angle	Vert 60 deg Horz 30 deg	Vert 30 deg Horz 60 deg	45 degree Angle	Vert 60 deg Horz 30 deg
1/4	7 x 7 x 7	0.87	0.71	0.50	1.3	1.1	0.75
3/8	7 x 7 x 7	1.9	1.5	1.1	2.8	2.3	1.6
1/2	7 x 7 x 7	3.2	2.6	1.8	4.8	3.9	2.8
5/8	7 x 7 x 7	4.8	3.9	2.8	7.2	5.9	4.2
3/4	7 x 7 x 7	6.6	5.4	3.8	9.9	8.1	5.7
5/8	7 x 7 x 19	5.0	4.1	2.9	7.5	6.1	4.3
3/4	7 x 7 x 19	7.0	5.7	4.1	10.0	8.6	6.1
7/8	7 x 7 x 19	9.3	7.6	5.4	14.0	11.0	8.1
1	7 x 7 x 19	12.0	9.7	6.9	18.0	14.0	10.0
1-1/8	7 x 7 x 19	14.0	12.0	8.2	21.0	17.0	12.0
1-1/4	7 x 7 x 19	17.0	14.0	9.9	26.0	21.0	15.0
3/4	7x6x19 IWRC	6.6	5.4	3.8	9.9	8.0	5.7
7/8	7x6x19 IWRC	8.7	7.1	5.0	13.0	11.0	7.5
1	7x6x19 IWRC	11.0	9.0	6.4	17.0	13.0	9.6
1-1/8	7x6x19 IWRC	13.0	11.0	7.7	20.0	16.0	11.0
1-1/4	7x6x19 IWRC	16.0	13.0	9.2	24.0	20.0	14.0
1-5/16	7x6x19 IWRC	17.0	14.0	10.0	26.0	21.0	15.0
1-3/8	7x6x19 IWRC	19.0	15.0	11.0	28.0	23.0	16.0
1-1/2	7x6x19 IWRC	22.0	18.0	13.0	33.0	27.0	19.0

Table H-10
RATED CAPACITIES FOR 2-LEG AND 3-LEG BRIDLE SLINGS
8-PART AND 6-PART BRAIDED ROPE
6 x 7 AND 6 x 19 CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE
7 x 7 CONSTRUCTION GALVANIZED AIRCRAFT GRADE ROPE

Component Rope		Rated Capacities, Tons (2,000 lb)											
		2-Leg Bridle Slings						3-Leg Bridle Slings					
		Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree		Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
Dia (Inches)	Constr	8-Part	6-Part	8-Part	6-Part	8-Part	6-Part	8-Part	6-Part	8-Part	6-Part	8-Part	6-Part
3/32	6 x 7	0.74	0.55	0.60	0.45	0.42	0.32	1.1	0.83	0.90	0.68	0.64	0.48
1/8	6 x 7	1.3	0.98	1.1	0.80	0.76	0.57	2.0	1.5	1.6	1.2	1.1	0.85
3/16	6 x 7	2.9	2.2	2.4	1.8	1.7	1.3	4.4	3.3	3.6	2.7	2.5	1.9
3/32	7 x 7	0.89	0.67	0.72	0.55	0.51	0.39	1.3	1.0	1.1	0.82	0.77	0.58
1/8	7 x 7	1.6	1.2	1.3	1.0	0.95	0.71	2.5	1.8	2.0	1.5	1.4	1.1
3/16	7 x 7	3.6	2.7	2.9	2.2	2.1	1.5	5.4	4.0	4.4	3.3	3.1	2.3
3/16	6 x 19	3.0	2.2	2.4	1.8	1.7	1.3	4.5	3.4	3.7	2.8	2.6	1.9
1/4	6 x 19	5.3	4.0	4.3	3.2	3.1	2.3	8.0	6.0	6.5	4.9	4.6	3.4
5/16	6 x 19	8.3	6.2	6.7	5.0	4.8	3.6	12.0	9.3	10.0	7.6	7.1	5.4
3/8	6 x 19	12.0	8.9	9.7	7.2	6.8	5.1	18.0	13.0	14.0	11.0	10.0	7.7
7/16	6 x 19	16.0	12.0	13.0	9.8	9.3	6.9	24.0	18.0	20.0	15.0	14.0	10.0
1/2	6 x 19	21.0	15.0	17.0	13.0	12.0	9.0	31.0	23.0	25.0	19.0	18.0	13.0
9/16	6 x 19	26.0	20.0	21.0	16.0	15.0	11.0	39.0	29.0	32.0	24.0	23.0	17.0
5/8	6 x 19	32.0	24.0	26.0	20.0	19.0	14.0	48.0	36.0	40.0	30.0	28.0	21.0
3/4	6 x 19	46.0	35.0	38.0	28.0	27.0	20.0	69.0	52.0	56.0	42.0	40.0	30.0
7/8	6 x 19	62.0	47.0	51.0	38.0	36.0	27.0	94.0	70.0	76.0	57.0	54.0	40.0
1	6 x 19	81.0	61.0	66.0	50.0	47.0	35.0	22.0	91.0	99.0	74.0	70.0	53.0

Table H-11
RATED CAPACITIES FOR STRAND LAID GROMMET – HAND TUCKED
IMPROVED PLOW STEEL GRADE ROPE

ROPE BODY		RATED CAPACITIES, TONS (2,000 lb)		
Dia (Inches)	Constr	 Vertical	 Choker	 Vertical Basket*
1/4	7 x 19	0.85	0.64	1.7
5/16	7 x 19	1.3	1.0	2.6
3/8	7 x 19	1.9	1.4	3.8
7/16	7 x 19	2.6	1.9	5.2
1/2	7 x 19	3.3	2.5	6.7
9/16	7 x 19	4.2	3.1	8.4
5/8	7 x 19	5.2	3.9	10.00
3/4	7 x 19	7.4	5.6	15.0
7/8	7 x 19	10.0	7.5	20.0
1	7 x 19	13.0	9.7	26.0
1-1/8	7 x 19	16.0	12.0	32.0
1-1/4	7 x 37	18.0	14.0	37.0
1-3/8	7 x 37	22.0	16.0	44.0
1-1/2	7 x 37	26.0	19.0	52.0

* These values only apply when the D/d ratio is 5 or greater where:
D = Diameter of curvature around which rope is bent.
d = Diameter of rope body.

Table H-12

RATED CAPACITIES FOR CABLE LAID GROMMET – HAND TUCKED 7 × 6 × 7 AND 7 × 6 × 19 CONSTRUCTIONS IMPROVED PLOW STEEL GRADE ROPE 7 × 7 × 7 CONSTRUCTION GALVANIZED AIRCRAFT GRADE ROPE

CABLE BODY		RATED CAPACITIES, TONS (2,000 lb)		
Dia (Inches)	Constr	Vertical	Choker	Vertical Basket*
3/8	7 × 6 × 7	1.3	0.95	2.5
9/16	7 × 6 × 7	2.8	2.1	5.6
5/8	7 × 6 × 7	3.8	2.8	7.6
3/8	7 × 7 × 7	1.6	1.2	3.2
9/16	7 × 7 × 7	3.5	2.6	6.9
5/8	7 × 7 × 7	4.5	3.4	9.0
5/8	7 × 6 × 19	3.9	3.0	7.9
3/4	7 × 6 × 19	5.1	3.8	10.0
15/16	7 × 6 × 19	7.9	5.9	16.0
1-1/8	7 × 6 × 19	11.0	8.4	22.0
1-5/16	7 × 6 × 19	15.0	11.0	30.0
1-1/2	7 × 6 × 19	19.0	14.0	39.0
1-11/16	7 × 6 × 19	24.0	18.0	49.0
1-7/8	7 × 6 × 19	30.0	22.0	60.0
2-1/4	7 × 6 × 19	42.0	31.0	84.0
2-5/8	7 × 6 × 19	56.0	42.0	112.0

* These values only apply when the D/d ratio is 5 or greater where:
D = Diameter of curvature around which cable body is bent.
d = Diameter of cable body.

Table H-13

RATED CAPACITIES FOR STRAND LAID ENDLESS SLINGS-MECHANICAL JOINT IMPROVED PLOW STEEL GRADE ROPE

ROPE BODY		RATED CAPACITIES, TONS (2,000 lb)		
Dia (Inches)	Constr	Vertical	Choker	Vertical Basket*
1/4	6 × 19 IWRC	0.92	0.69	1.8
3/8	6 × 19 IWRC	2.0	1.5	4.1
1/2	6 × 19 IWRC	3.6	2.7	7.2
5/8	6 × 19 IWRC	5.6	4.2	11.0
3/4	6 × 19 IWRC	8.0	6.0	16.0
7/8	6 × 19 IWRC	11.0	8.1	21.0
1	6 × 19 IWRC	14.0	10.0	28.0
1-1/8	6 × 19 IWRC	18.0	13.0	35.0
1-1/4	6 × 37 IWRC	21.0	15.0	41.0
1-3/8	6 × 37 IWRC	25.0	19.0	50.0
1-1/2	6 × 37 IWRC	29.0	22.0	59.0

* These values only apply when the D/d ratio is 5 or greater where:
D = Diameter of curvature around which rope is bent.
d = Diameter of rope body.

Table H-14

RATED CAPACITIES FOR CABLE LAID ENDLESS SLINGS-MECHANICAL JOINT 7 × 7 × 7 AND 7 × 7 × 19 CONSTRUCTIONS GALVANIZED AIRCRAFT GRADE ROPE 7 × 6 × 19 IWRC CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE

CABLE BODY		RATED CAPACITIES, TONS (2,000 lb)		
Dia (Inches)	Constr	Vertical	Choker	Vertical Basket*
1/4	7 × 7 × 7	0.83	0.62	1.6
3/8	7 × 7 × 7	1.8	1.3	3.5
1/2	7 × 7 × 7	3.0	2.3	6.1
5/8	7 × 7 × 7	4.5	3.4	9.1
3/4	7 × 7 × 7	6.3	4.7	12.0
5/8	7 × 7 × 19	4.7	3.5	9.5
3/4	7 × 7 × 19	6.7	5.0	13.0
7/8	7 × 7 × 19	8.9	6.6	18.0
1	7 × 7 × 19	11.0	8.5	22.0
1-1/8	7 × 7 × 19	14.0	10.0	28.0
1-1/4	7 × 7 × 19	17.0	12.0	33.0
3/4	7 × 6 × 19 IWRC	6.2	4.7	12.0
7/8	7 × 6 × 19 IWRC	8.3	6.2	16.0
1	7 × 6 × 19 IWRC	10.0	7.9	21.0
1-1/8	7 × 6 × 19 IWRC	13.0	9.7	26.0
1-1/4	7 × 6 × 19 IWRC	16.0	12.0	31.0
1-3/8	7 × 6 × 19 IWRC	18.0	14.0	37.0
1-1/2	7 × 6 × 19 IWRC	22.0	16.0	43.0

* These values only apply when the D/d value is 5 or greater where:
D = Diameter of curvature around which cable body is bent.
d = Diameter of cable body.

Table H-15
MANILA ROPE SLINGS

ROPE DIAMETER Nominal In Inches	Nominal Weight Per 100 ft In Pounds	Minimum Breaking Strength In Pounds	RATED CAPACITY IN POUNDS (Safety Factor = 5)											
			EYE AND EYE SLING						ENDLESS SLING					
			VERTICAL HITCH	CHOKER HITCH	BASKET HITCH				VERTICAL HITCH	CHOKER HITCH	BASKET HITCH			
					Angle of Rope to Horizontal						Angle of Rope to Horizontal			
					90 deg	60 deg	45 deg	30 deg			90 deg	60 deg	45 deg	30 deg
					Angle of Rope to Vertical						Angle of Rope to Vertical			
					0 deg	30 deg	45 deg	60 deg			0 deg	30 deg	45 deg	60 deg
1/2	7.5	2,650	550	250	1,100	900	750	550	950	500	1,900	1,700	1,400	950
9/16	10.4	3,450	700	350	1,400	1,200	1,000	700	1,200	600	2,500	2,200	1,800	1,200
5/8	13.3	4,400	900	450	1,800	1,500	1,200	900	1,600	800	3,200	2,700	2,200	1,600
3/4	16.7	5,400	1,100	550	2,200	1,900	1,500	1,100	2,000	950	3,900	3,400	2,800	2,000
13/16	19.5	6,500	1,300	650	2,600	2,300	1,800	1,300	2,300	1,200	4,700	4,100	3,300	2,300
7/8	22.5	7,700	1,500	750	3,100	2,700	2,200	1,500	2,800	1,400	5,600	4,800	3,900	2,800
1	27.0	9,000	1,800	900	3,600	3,100	2,600	1,800	3,200	1,600	6,500	5,600	4,600	3,200
1 1/16	31.3	10,500	2,100	1,100	4,200	3,600	3,000	2,100	3,800	1,900	7,600	6,600	5,400	3,800
1 1/8	36.0	12,000	2,400	1,200	4,800	4,200	3,400	2,400	4,300	2,200	8,600	7,500	6,100	4,300
1 1/4	41.7	13,500	2,700	1,400	5,400	4,700	3,800	2,700	4,900	2,400	9,700	8,400	6,900	4,900
1 5/16	47.9	15,000	3,000	1,500	6,000	5,200	4,300	3,000	5,400	2,700	11,000	9,400	7,700	5,400
1 1/2	59.9	18,500	3,700	1,850	7,400	6,400	5,200	3,700	6,700	3,300	13,500	11,500	9,400	6,700
1 5/8	74.6	22,500	4,500	2,300	9,000	7,800	6,400	4,500	8,100	4,100	16,000	14,000	11,500	8,000
1 3/4	89.3	26,500	5,300	2,700	10,500	9,200	7,500	5,300	9,500	4,800	19,000	16,500	13,500	9,500
2	107.5	31,000	6,200	3,100	12,500	10,500	8,800	6,200	11,000	5,600	22,500	19,500	16,000	11,000
2 1/3	125.0	36,000	7,200	3,600	14,500	12,500	10,000	7,200	13,000	6,500	26,000	22,500	18,500	13,000
2 1/4	146.0	41,000	8,200	4,100	16,500	14,000	11,500	8,200	15,000	7,400	29,500	25,500	21,000	15,000
2 1/2	166.7	46,500	9,300	4,700	18,500	16,000	13,000	9,300	16,500	8,400	33,500	29,000	23,500	16,500
2 5/8	190.8	52,000	10,500	5,200	21,000	18,000	14,500	10,500	18,500	9,500	37,500	32,500	26,500	18,500

Refer to Figs. H-1 and H-2

Table H-16
NYLON ROPE SLINGS

ROPE DIAMETER Nominal In Inches	Nominal Weight Per 100 ft In Pounds	Minimum Breaking Strength In Pounds	RATED CAPACITY IN POUNDS (Safety Factor = 9)											
			EYE AND EYE SLING						ENDLESS SLING					
			VERTICAL HITCH	CHOKER HITCH	BASKET HITCH				VERTICAL HITCH	CHOKER HITCH	BASKET HITCH			
					Angle of Rope to Horizontal						Angle of Rope to Horizontal			
					90 deg	60 deg	45 deg	30 deg			90 deg	60 deg	45 deg	30 deg
					Angle of Rope to Vertical						Angle of Rope to Vertical			
					0 deg	30 deg	45 deg	60 deg			0 deg	30 deg	45 deg	60 deg
1/2	6.5	6,080	700	350	1,400	1,200	950	700	1,200	600	2,400	2,100	1,700	1,200
9/16	8.3	7,600	850	400	1,700	1,500	1,200	850	1,500	750	3,000	2,600	2,200	1,500
5/8	10.5	9,880	1,100	550	2,200	1,900	1,600	1,100	2,000	1,000	4,000	3,400	2,800	2,000
3/4	14.5	13,490	1,500	750	3,000	2,600	2,100	1,500	2,700	1,400	5,400	4,700	3,800	2,700
13/16	17.0	16,150	1,800	900	3,600	3,100	2,600	1,800	3,200	1,600	6,400	5,600	4,600	3,200
7/8	20.0	19,000	2,100	1,100	4,200	3,700	3,000	2,100	3,800	1,900	7,600	6,600	5,400	3,800
1	26.0	23,750	2,600	1,300	5,300	4,600	3,700	2,600	4,800	2,400	9,500	8,200	6,700	4,800
1 1/16	29.0	27,360	3,000	1,500	6,100	5,300	4,300	3,000	5,500	2,700	11,000	9,500	7,700	5,500
1 1/8	34.0	31,350	3,500	1,700	7,000	6,000	5,000	3,500	6,300	3,100	12,500	11,000	8,900	6,300
1 1/4	40.0	35,625	4,000	2,000	7,900	6,900	5,600	4,000	7,100	3,600	14,500	12,500	10,000	7,100
1 5/16	45.0	40,850	4,500	2,300	9,100	7,900	6,400	4,500	8,200	4,100	16,500	14,000	12,000	8,200
1 1/2	55.0	50,350	5,600	2,800	11,000	9,700	7,900	5,600	10,000	5,000	20,000	17,500	14,000	10,000
1 5/8	68.0	61,750	6,900	3,400	13,500	12,000	9,700	6,900	12,500	6,200	24,500	21,500	17,500	12,500
1 3/4	83.0	74,100	8,200	4,100	16,500	14,500	11,500	8,200	15,000	7,400	29,500	27,500	21,000	15,000
2	95.0	87,400	9,700	4,900	19,500	17,000	13,500	9,700	17,500	8,700	35,000	30,500	24,500	17,500
2 1/8	109.0	100,700	11,000	5,600	22,500	19,500	16,000	11,000	20,000	10,000	40,500	35,000	28,500	20,000
2 1/4	129.0	118,750	13,000	6,600	26,500	23,000	18,500	13,000	24,000	12,000	47,500	41,000	33,500	24,000
2 1/2	149.0	138,000	15,000	7,400	29,500	25,500	21,000	15,000	26,500	13,500	53,000	46,000	37,500	26,500
2 5/8	168.0	153,900	17,100	8,600	34,000	29,500	24,000	17,000	31,000	15,500	61,500	53,500	43,500	31,000

Refer to Figs. H-1 and H-2

Table H-17
POLYESTER ROPE SLINGS

ROPE DIAMETER Nominal In Inches	Nominal Weight Per 100 ft In Pounds	Minimum Breaking Strength In Pounds	RATED CAPACITY IN POUNDS (Safety Factor = 9)											
			EYE AND EYE SLING						ENDLESS SLING					
			VERTICAL HITCH	CHOKER HITCH	BASKET HITCH				VERTICAL HITCH	CHOKER HITCH	BASKET HITCH			
					Angle of Rope to Horizontal						Angle of Rope to Horizontal			
					90 deg	60 deg	45 deg	30 deg			90 deg	60 deg	45 deg	30 deg
					Angle of Rope to Vertical						Angle of Rope to Vertical			
					0 deg	30 deg	45 deg	60 deg			0 deg	30 deg	45 deg	60 deg
1/2	8.0	6,080	700	350	1,400	1,200	950	700	1,200	600	2,400	2,100	1,700	1,200
9/16	10.2	7,600	850	400	1,700	1,500	1,200	850	1,500	750	3,000	2,600	2,200	1,500
5/8	13.0	9,500	1,100	550	2,100	1,800	1,500	1,100	1,900	950	3,800	3,300	2,700	1,900
3/4	17.5	11,875	1,300	650	2,600	2,300	1,900	1,300	2,400	1,200	4,800	4,100	3,400	2,400
13/16	21.0	14,725	1,600	800	3,300	2,800	2,300	1,600	2,900	1,500	5,900	5,100	4,200	2,900
7/8	25.0	17,100	1,900	950	3,800	3,300	2,700	1,900	3,400	1,700	6,800	5,900	4,800	3,400
1	30.5	20,900	2,300	1,200	4,600	4,000	3,300	2,300	4,200	2,100	8,400	7,200	5,900	4,200
1 1/16	34.5	24,225	2,700	1,300	5,400	4,700	3,800	2,700	4,800	2,400	9,700	8,400	6,900	4,800
1 1/8	40.0	28,025	3,100	1,600	6,200	5,400	4,400	3,100	5,600	2,800	11,000	9,700	7,900	5,600
1 1/4	46.3	31,540	3,500	1,800	7,000	6,100	5,000	3,500	6,300	3,200	12,500	11,000	8,900	6,300
1 5/16	52.5	35,625	4,000	2,000	7,900	6,900	5,600	4,000	7,100	3,600	14,500	12,500	10,000	7,100
1 1/2	66.8	44,460	4,900	2,500	9,900	8,600	7,000	4,900	8,900	4,400	18,000	15,500	12,500	8,900
1 5/8	82.0	54,150	6,000	3,000	12,000	10,400	8,500	6,000	11,000	5,400	21,500	19,000	15,500	11,000
1 3/4	98.0	64,410	7,200	3,600	14,500	12,500	10,000	7,200	13,000	6,400	26,000	22,500	18,000	13,000
2	118.0	76,000	8,400	4,200	17,000	14,500	12,000	8,400	15,000	7,600	30,500	26,500	21,500	15,000
2 1/8	135.0	87,400	9,700	4,900	19,500	17,000	13,500	9,700	17,500	8,700	35,000	30,500	24,500	17,500
2 1/4	157.0	101,650	11,500	5,700	22,500	19,500	16,000	11,500	20,500	10,000	40,500	35,000	29,000	20,500
2 1/2	181.0	115,900	13,000	6,400	26,000	22,500	18,000	13,000	23,000	11,500	46,500	40,000	33,000	23,000
2 5/8	205.0	130,150	14,500	7,200	29,000	25,000	20,500	14,500	26,000	13,000	52,000	45,000	37,000	26,000

Refer to Figs. H-1 and H-2

Table H-18
POLYPROPYLENE ROPE SLINGS

ROPE DIAMETER Nominal In Inches	Nominal Weight Per 100 ft In Pounds	Minimum Breaking Strength In Pounds	RATED CAPACITY IN POUNDS (Safety Factor = 6)											
			EYE AND EYE SLING						ENDLESS SLING					
			VERTICAL HITCH	CHOKER HITCH	BASKET HITCH				VERTICAL HITCH	CHOKER HITCH	BASKET HITCH			
					Angle of Rope to Horizontal						Angle of Rope to Horizontal			
					90 deg	60 deg	45 deg	30 deg			90 deg	60 deg	45 deg	30 deg
					Angle of Rope to Vertical						Angle of Rope to Vertical			
					0 deg	30 deg	45 deg	60 deg			0 deg	30 deg	45 deg	60 deg
1/2	4.7	3,990	650	350	1,300	1,200	950	650	1,200	600	2,400	2,100	1,700	1,200
9/16	6.1	4,845	800	400	1,600	1,400	1,100	800	1,500	750	2,900	2,500	2,100	1,500
5/8	7.5	5,890	1,000	500	2,000	1,700	1,400	1,000	1,800	900	3,500	3,100	2,500	1,800
3/4	10.7	8,075	1,300	700	2,700	2,300	1,900	1,300	2,400	1,200	4,900	4,200	3,400	2,400
13/16	12.7	9,405	1,600	800	3,100	2,700	2,200	1,600	2,800	1,400	5,600	4,900	4,000	2,800
7/8	15.0	10,925	1,800	900	3,600	3,200	2,600	1,800	3,300	1,600	6,600	5,700	4,600	3,300
1	18.0	13,300	2,200	1,100	4,400	3,800	3,100	2,200	4,000	2,000	8,000	6,900	5,600	4,000
1 1/16	20.4	15,200	2,500	1,300	5,100	4,400	3,600	2,500	4,600	2,300	9,100	7,900	6,500	4,600
1 1/8	23.7	17,385	2,900	1,500	5,800	5,000	4,100	2,900	5,200	2,600	10,500	9,000	7,400	5,200
1 1/4	27.0	19,950	3,300	1,700	6,700	5,800	4,700	3,300	6,000	3,000	12,000	10,500	8,500	6,000
1 5/16	30.5	22,325	3,700	1,900	7,400	6,400	5,300	3,700	6,700	3,400	13,500	11,500	9,500	6,700
1 1/2	38.5	28,215	4,700	2,400	9,400	8,100	6,700	4,700	8,500	4,200	17,000	14,500	12,000	8,500
1 5/8	47.5	34,200	5,700	2,900	11,500	9,900	8,100	5,700	10,500	5,100	20,500	18,000	14,500	10,500
1 3/4	57.0	40,850	6,800	3,400	13,500	12,000	9,600	6,800	12,500	6,100	24,500	21,000	17,500	12,500
2	69.0	49,400	8,200	4,100	16,500	14,500	11,500	8,200	15,000	7,400	29,500	25,500	21,000	15,000
2 1/8	80.0	57,950	9,700	4,800	19,500	16,500	13,500	9,700	17,500	8,700	35,000	30,100	24,500	17,500
2 1/4	92.0	65,550	11,000	5,500	22,000	19,000	15,500	11,000	19,500	9,900	39,500	34,000	28,000	19,500
2 1/2	107.0	76,000	12,500	6,300	25,500	22,000	18,000	12,500	23,000	11,500	45,500	39,500	32,500	23,000
2 5/8	120.0	85,500	14,500	7,100	28,500	24,500	20,000	14,500	25,500	13,000	51,500	44,500	36,500	25,500

Refer to Figs. H-1 and H-2

TABLE H-19—SAFE WORKING LOADS FOR SHACKLES

[In tons of 2000 pounds]

Material size (inches)	Pin diameter (inches)	Safe working load
½	⅝	1.4
⅝	¾	2.2
¾	⅞	3.2
⅞	1	4.3
1	1⅛	5.6
1⅛	1¼	6.7
1¼	1⅜	8.2
1⅜	1½	10.0
1½	1⅝	11.9
1¾	2	16.2
2	2¼	21.2

TABLE H-20—NUMBER AND SPACING OF U-BOLT WIRE ROPE CLIPS

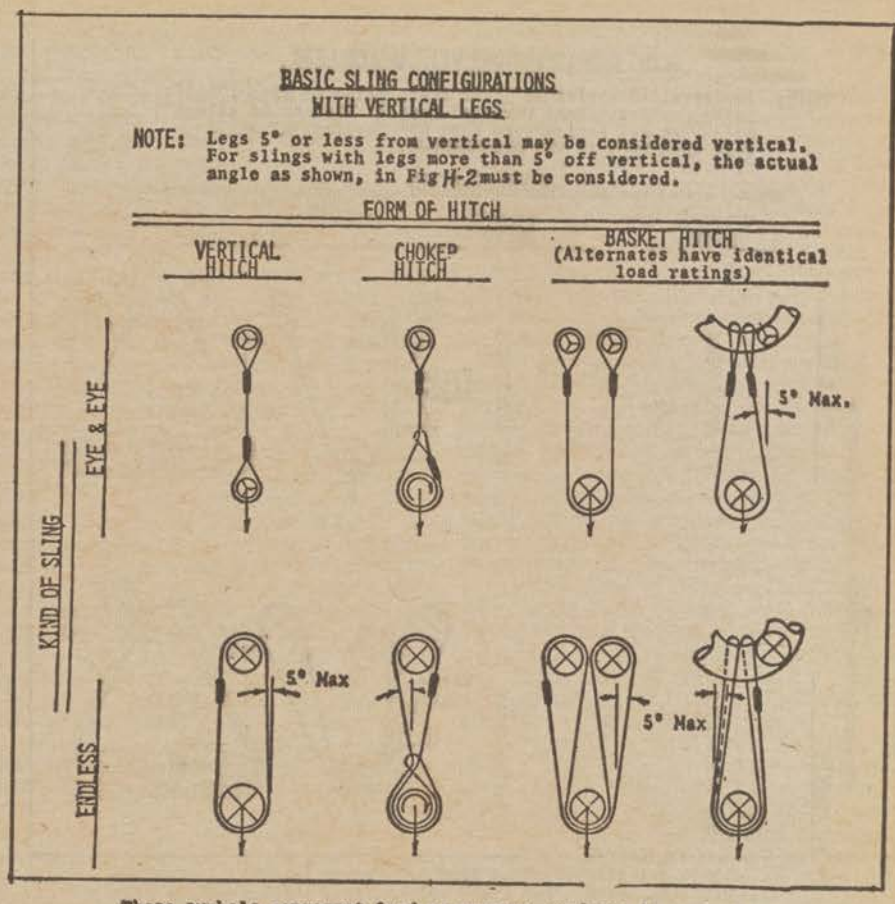
Improved plow steel, rope diameter inches	Number of clips		Minimum spacing (inches)
	Drop forged	Other material	
¼	3	4	3
⅜	3	4	3¼
½	4	5	4½
⅝	4	5	5¼
⅞	4	6	6
1	5	6	6¾
1⅛	5	7	7½
1¼	6	7	8¼
1½	6	8	9

(f) *Sling configurations.* The several sling configurations encompassed here are identified in Figures H–1 and H–2. For both figures, the following symbols are used to limit and qualify the contact surface between a portion of the sling and a load or support:

Represents a contact surface which shall have a diameter of curvature at least double the diameter of the rope from which the sling is made.

Represents a contact surface which shall have a diameter of curvature at least eight times the diameter of the rope.

Represents a load in a choker hitch and illustrates the rotary force on the load and/or the slippage of the rope in contact with the load. Diameter of curvature of load surface shall be at least double the diameter of the rope.



These symbols represent load or support surfaces in contact with the sling. For fibre rope slings, these surfaces have limitations, as stated in paragraph (f).

Fig. H-1

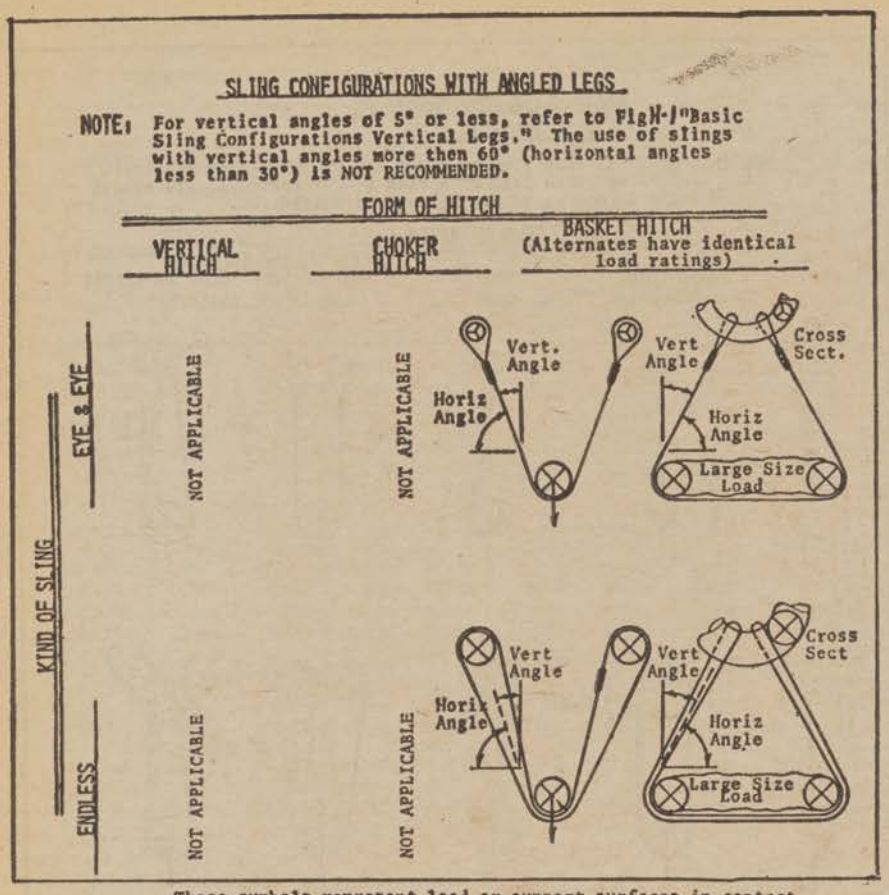


Fig. H-2

Subpart I—Tools—Hand and Power

§ 1518.300 General requirements.

(a) *Condition of tools.* All hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in a safe condition.

(b) *Guarding.* (1) When power operated tools are designed to accommodate guards, they shall be equipped with such guards when in use.

(2) Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating or moving parts or equipment shall be guarded if such parts are exposed to contact by employees or otherwise create a hazard. Guarding shall meet the requirements as set forth in American National Standards Institute, B15.1–1953 (R1958), Safety Code for Mechanical Power-Transmission Apparatus.

(c) *Personal protective equipment.* Employees using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases shall be provided with the particular personal protective equipment necessary to protect them from the hazard. All personal protective equipment shall meet the requirements and be maintained according to Subparts D and E of this part.

(d) *Constant pressure switch.* All hand-held power tools shall be equipped with a constant pressure switch that will shut off the power when the pressure is released.

§ 1518.301 Hand tools.

(a) Employers shall not issue or permit the use of unsafe hand tools.

(b) Wrenches, including adjustable, pipe, end, and socket wrenches shall not be used when jaws are sprung to the point that slippage occurs.

(c) Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.

(d) The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

§ 1518.302 Power-operated hand tools.

(a) *Electric power-operated tools.* (1) Electric power operated tools shall either be of the approved double-insulated type or grounded in accordance with Subpart K of this part.

(2) The use of electric cords for hoisting or lowering tools shall not be permitted.

(b) *Pneumatic power tools.* (1) Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected.

(2) Safety clips or retainers shall be securely installed and maintained on pneumatic impact tools to prevent attachments from being accidentally expelled.

(3) All pneumatically driven nailers, staplers, and other similar equipment which operate at more than 100 p.s.i. pressure at the tool shall have a safety device on the muzzle to prevent the tool from operating, unless the muzzle is in contact with the work surface.

(4) Compressed air shall not be used for cleaning purposes except where reduced to less than 30 p.s.i. at the nozzle and then only with effective chip guarding and personal protective equipment which meets the requirements of Subpart E of this part.

(5) The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings shall not be exceeded.

(6) The use of hoses for hoisting or lowering tools shall not be permitted.

(7) An excess flow valve shall be installed in the air supply line at the manifold or source which will shut off the air supply automatically if the line fails.

(8) Airless spray guns of the type which atomize paints and fluids at high pressures (1,000 pounds or more per square inch) shall be equipped with automatic or visible manual safety devices which will prevent pulling of the trigger to prevent release of the paint or fluid until the safety device is manually released.

(9) In lieu of the above, a diffuser nut which will prevent high pressure, high velocity release, while the nozzle tip is removed, plus a nozzle tip guard which will prevent the tip from coming into contact with the operator, or other equivalent protection, shall be provided.

(c) *Fuel powered tools.* (1) All fuel powered tools shall be stopped while being refueled, serviced, or maintained, and fuel shall be transported, handled, and stored in accordance with Subpart F of this part.

(2) When fuel powered tools are used in enclosed spaces, the applicable requirements for concentrations of toxic gases and use of personal protective equipment, as outlined in Subparts D and E of this part, shall apply.

(d) *Hydraulic power tools.* (1) the fluid used in hydraulic powered tools shall be fire-resistant fluids approved under Schedule 30 of the U.S. Bureau of Mines, Department of the Interior, and shall retain its operating characteristics

at the most extreme temperatures to which it will be exposed.

(2) The manufacturer's safe operating pressures for hoses, valves, pipes, filters, and other fittings shall not be exceeded.

(e) *Powder-actuated tools.* (1) Only employees who have been trained in the operation of the particular tool in use shall be allowed to operate a powder-actuated tool.

(2) The tool shall be tested each day before loading to see that safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.

(3) Any tool found not in proper working order, or that develops a defect during use, shall be immediate removed from service and not used until properly repaired.

(4) Personal protective equipment shall be in accordance with Subpart E of this part.

(5) Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employees. Hands shall be kept clear of the open barrel end.

(6) Loaded tools shall not be left unattended.

(7) Fasteners shall not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile.

(8) Driving into materials easily penetrated shall be avoided unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side.

(9) No fastener shall be driven into a spalled area caused by an unsatisfactory fastening.

(10) Tools shall not be used in an explosive or flammable atmosphere.

(11) All tools shall be used with the correct shield, guard, or attachment recommended by the manufacturer.

(12) Powder-actuated tools used by employees shall meet all other applicable requirements of American National Standards Institute, A10.3–1970, Safety Requirements for Explosive-Actuated Fastening Tools.

§ 1518.303 Abrasive wheels and tools.

(a) *Power.* All grinding machines shall be supplied with sufficient power to maintain the rated spindle speed under all conditions of normal operation.

(b) *Guarding.* Grinding machines shall be equipped with safety guards in conformance with the requirements of American National Standards Institute, B7.1–1964, Safety Code for the Use, Care and Protection of Abrasive Wheels, and paragraph (d) of this section.

(c) *Exhaust provision.* All stationary machines used for dry grinding shall have provisions made for connection to an exhaust system.

(d) *Use of abrasive wheels.* (1) Floor stand and bench mounted abrasive wheels, used for external grinding, shall be provided with safety guards (protection hoods). The maximum angular exposure of the grinding wheel periphery and sides shall be not more than 90°, except that when work requires contact with the wheel below the horizontal plane of the spindle, the angular exposure shall not exeecd 125°. In either case, the exposure shall begin not more than 65° above the horizontal plane of the spindle. Safety guards shall be strong enough to withstand the effect of a bursting wheel.

(2) Floor and bench-mounted grinders shall be provided with work rests which are rigidly supported and readily adjustable. Such work rests shall be kept at a distance not to exceed one-eighth inch from the surface of the wheel.

(3) Cup type wheels used for external grinding shall be protected by either a revolving cup guard or a band type guard in accordance with the provisions of the American National Standards Institute, B7.1–1964, Safety Code for the Use, Care, and Protection of Abrasive Wheels. All other portable abrasive wheels used for external grinding, shall be provided with safety guards (protection hoods) meeting the requirements of subparagraph (5) of this paragraph, except as follows:

(i) When the work location makes it impossible, a wheel equipped with safety flanges, as described in subparagraph (6) of this paragraph, shall be used;

(ii) When wheels 2 inches or less in diameter which are securely mounted on the end of a steel mandrel are used.

(4) Portable abrasive wheels used for internal grinding shall be provided with safety flanges (protection flanges) meeting the requirements of subparagraph (6) of this paragraph, except as follows:

(i) When wheels 2 inches or less in diameter which are securely mounted on the end of a steel mandrel are used;

(ii) If the wheel is entirely within the work being ground while in use.

(5) When safety guards are required, they shall be so mounted as to maintain proper alignment with the wheel, and the guard and its fastenings shall be of sufficient strength to retain fragments of the wheel in case of accidental breakage. The maximum angular exposure of the grinding wheel periphery and sides shall not exceed 180°.

(6) When safety flanges are required, they shall be used only with wheels designed to fit the flanges. Only safety flanges, of a type and design and properly assembled so as to ensure that the pieces of the wheel will be retained in case of accidental breakage, shall be used.

(7) All abrasive wheels shall be closely inspected and ring-tested before mounting to ensure that they are free from cracks or defects.

(8) Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place.

(9) The power supply shall be sufficient to maintain the rated spindle speed under all conditions of normal grinding. The rated maximum speed of the wheel shall not be exceeded.

(10) All employees using abrasive wheels shall be protected by eye protection equipment in accordance with the requirements of Subpart E of this part, except when adequate eye protection is afforded by eye shields which are permanently attached to the bench or floor stand.

(e) *Other requirements.* All abrasive wheels and tools used by employees shall meet other applicable requirements of American National Standards Institute, B7.1–1964, Safety Code for the Use, Care and Protection of Abrasive Wheels.

§ 1518.304 Woodworking tools.

(a) *Disconnect switches.* All power driven woodworking tools shall be provided with a disconnect switch that can be locked in the off position.

(b) *Speeds.* The operating speed shall be etched or otherwise permanently marked on all circular saws over 20 inches in diameter or operating at over 10,000 peripheral feet per minute. Any saw so marked shall not be operated at a speed other than that marked on the blade. When a marked saw is retensioned for a different speed, the marking shall be corrected to show the new speed.

(c) *Self-feed.* Automatic feeding devices shall be installed on machines whenever the nature of the work will permit. Feeder attachments shall have the feed rolls or other moving parts covered or guarded so as to protect the operator from hazardous points.

(d) *Guarding.* All portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

(e) *Personal protective equipment.* All personal protective equipment provided for use shall conform to Subpart E of this part.

(f) *Other requirements.* All woodworking tools and machinery shall met other applicable requirements of American National Standards Institute, 01.1–1961, Safety Code for Woodworking Machinery.

§ 1518.305 Jacks—lever and ratchet, screw, and hydraulic.

(a) *General requirements.* (1) The manufacturer's rated capacity shall be legibly marked on all jacks and shall not be exceeded.

(2) All jacks shall have a positive stop to prevent overtravel.

(b) *Lift slab construction.* (1) Hydraulic jacks used in lift slab construction shall have a safety device which will cause the jacks to support the load in any position in the event the jack malfunctions.

(2) If lift slabs are automatically controlled, a device shall be installed which will stop the operation when the ½-inch leveling tolerance is exceeded.

(c) *Blocking.* When it is necesary, to provide a firm foundation, the base of the

jack shall be blocked or cribbed. Where there is a possibility of slippage of the metal cap of the jack, a wood block shall be placed between the cap and the load.

Subpart J—Welding and Cutting

§ 1518.350 Ventilation and protection in welding, cutting, and heating.

(a) *Mechanical ventilation.* For purposes of this section, mechanical ventilation shall meet the following requirements:

(1) Mechanical ventilation shall consist of either general mechanical ventilation systems or local exhaust systems.

(2) General mechanical ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits, as defined in Subpart D of this part.

(3) Local exhaust ventilation shall consist of freely movable hoods intended to be placed by the welder or burner as close as practicable to the work. This system shall be of sufficient capacity and so arranged as to remove fumes and smoke at the source and keep the concentration of them in the breathing zone within safe limits as defined in Subpart D of this part.

(4) Contaminated air exhausted from a working space shall be discharged into the open air or otherwise clear of the source of intake air.

(5) All air replacing that withdrawn shall be clean and respirable.

(6) Oxygen shall not be used for ventilation purposes, comfort cooling, blowing dust from clothing, or for cleaning the work area.

(b) *Welding, cutting, and heating in confined spaces.* (1) Except as provided in subparagraph (2) of this paragraph and paragraph (c)(2) of this section, either general mechanical or local exhaust ventilation meeting the requirements of paragraph (a) of this section shall be provided whenever welding, cutting, or heating is performed in a confined space.

(2) When sufficient ventilation cannot be obtained without blocking the means of access, employees in the confined space shall be protected by air line respirators in accordance with the requirements of Subpart E of this part, and an employee on the outside of such a confined space shall be assigned to maintain communication with those working within it and to aid them in an emergency.

(c) *Welding, cutting, or heating of metals of toxic significance.* (1) Welding, cutting, or heating in any enclosed spaces involving the metals specified in this subparagraph shall be performed with either general mechanical or local exhaust ventilation meeting the requirements of paragraph (a) of this section:

(i) Zinc-bearing base or filler metals or metals coated with zinc-bearing materials.

(ii) Lead base metals;

(iii) Cadmium-bearing filler materials;

(iv) Chromium-bearing metals or metals coated with chromium-bearing materials.

(2) Welding, cutting, or heating in any enclosed spaces involving the metals specified in this subparagraph shall be performed with local exhaust ventilation in accordance with the requirements of paragraph (a) of this section, or employees shall be protected by air line respirators in accordance with the requirements of Subpart E of this part:

(i) Metals containing lead, other than as an impurity, or metals coated with lead-bearing materials;

(ii) Cadmium-bearing or cadmium-coated base metals;

(iii) Metals coated with mercury-bearing metals;

(iv) Beryllium-containing base or filler metals. Because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air line respirators.

(3) Employees performing such operations in the open air shall be protected by filter-type respirators in accordance with the requirements of Subpart E of this part, except that employees performing such operations on beryllium-containing base or filler metals shall be protected by air line respirators in accordance with the requirements of Subpart E of this part.

(4) Other employees exposed to the same atmosphere as the welders or burners shall be protected in the same manner as the welder or burner.

(d) *Inert-gas metal-arc welding.* (1) Since the inert-gas metal-arc welding process involves the production of ultraviolet radiation of intensities of 5 to 30 times that produced during shielded metal-arc welding, the decomposition of chlorinated solvents by ultraviolet rays, and the liberation of toxic fumes and gases, employees shall not be permitted to engage in, or be exposed to the process until the following special precautions have been taken:

(i) The use of chlorinated solvents shall be kept at least 200 feet from the exposed arc, and surfaces prepared with chlorinated solvents shall be thoroughly dry before welding is permitted on such surfaces.

(ii) Helpers and other employees in the area not protected from the arc by screening shall be protected by filter lenses meeting the requirements of Subpart E of this part. When two or more welders are exposed to each other's arc, filter lens goggles of a suitable type, meeting the requirements of Subpart E of this part shall be worn under welding helmets. Hand shields to protect the welder against flashes and radiant energy shall be used when either the helmet is lifted or the shield is removed.

(iii) Welders and other employees who are exposed to radiation shall be suitably protected so that the skin is covered completely to prevent burns and other damage by ultraviolet rays. Welding helmets and hand shields shall be free of leaks and openings, and free of highly reflective surfaces.

(iv) When inert-gas metal-arc welding is being performed on stainless steel, the requirements of paragraph (c)(2) of this section shall be met to protect against dangerous concentrations of nitrogen dioxide.

(e) *General welding, cutting, and heating.* (1) Welding, cutting, and heating, not involving conditions or materials described in paragraph (b), (c), or (d) of this section, may normally be done without mechanical ventilation or respiratory protective equipment, but where, because of unusual physical or atmospheric conditions, an unsafe accumulation of contaminants exists, suitable mechanical ventilation or respiratory protective equipment shall be provided.

(2) Employees performing any type of welding, cutting, or heating shall be protected by suitable eye protective equipment in accordance with the requirements of Subpart E of this part.

§ 1518.351 Fire prevention.

(a) When practical, objects to be welded, cut, or heated shall be moved to a designated safe location or, if the objects to be welded, cut, or heated cannot be readily moved, all movable fire hazards in the vicinity shall be taken to a safe place.

(b) If the object to be welded, cut, or heated cannot be moved and if all the fire hazards cannot be removed, positive means shall be taken to confine the heat, sparks, and slag, and to protect the immovable fire hazards from them.

(c) No welding, cutting, or heating shall be done where the application of flammable paints, or the presence of other flammable compounds, or heavy dust concentrations creates a hazard.

(d) Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.

(e) When the welding, cutting, or heating operation is such that normal fire prevention precautions are not sufficient, additional personnel shall be assigned to guard against fire while the actual welding, cutting, or heating operation is being performed, and for a sufficient period of time after completion of the work to ensure that no possibility of fire exists. Such personnel shall be instructed as to the specific anticipated fire hazards and how the firefighting equipment provided is to be used.

(f) When welding, cutting, or heating is performed on walls, floors, and ceilings, since direct penetration of sparks or heat transfer may introduce a fire hazard to an adjacent area, the same precautions shall be taken on the opposite side as are taken on the side on which the welding is being performed.

(g) For the elimination of possible fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be positively shut off at some point outside the enclosed space whenever the torch is not to be used or whenever the torch is left unattended for a substantial period of time, such as during the lunch period. Overnight and

at the change of shifts, the torch and hose shall be removed from the confined space. Open end fuel gas and oxygen hoses shall be immediately removed from enclosed spaces when they are disconnected from the torch or other gas-consuming device.

(h) Except when the contents are being removed or transferred, drums, pails, and other containers, which contain or have contained flammable liquids, shall be kept closed. Empty containers shall be removed to a safe area apart from hot work operations or open flames.

(i) Drums, containers, or hollow structures which have contained toxic or flammable substances shall, before welding, cutting, or heating is undertaken on them, either be filled with water or thoroughly cleaned of such substances and ventilated and tested.

(j) Before heat is applied to a drum, container, or hollow structure, a vent or opening shall be provided for the release of any built-up pressure during the application of heat.

§ 1518.352 Welding, cutting, and heating in way of preservative coatings.

(a) Before welding, cutting, or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.

(b) Precautions shall be taken to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable, they shall be stripped from the area to be heated to prevent ignition.

(c) Protection against toxic preservative coatings: (1) In enclosed spaces, all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application, or the employees shall be protected by air line respirators, meeting the requirements of Subpart E of this part.

(2) In the open air, employees shall be protected by a respirator, in accordance with requirements of Subpart E of this part.

(d) The preservative coatings shall be removed a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heating area may be used to limit the size of the area required to be cleaned.

§ 1518.353 Gas welding and cutting.

(a) *Transporting, moving, and storing compressed gas cylinders.* (1) Valve protection caps shall be in place and secured. Oil shall not be used to lubricate protection caps.

(2) When cylinders are hoisted, they shall be secured on a cradle, slingboard, or pallet. They shall not be hoisted by means of magnets or choker slings.

(3) Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck, or permitted to strike each other violently.

(4) When cylinders are transported by vehicle, they shall be secured in position.

(5) Valve protection caps shall not be used for lifting cylinders from one vertical position to another. Bars shall not be used under valves or vale protection caps to pry cylinders lose when frozen. Warm, not boiling, water shall be used to thaw cylinders loose.

(6) Unless cylinders are firmly secured on a special carrier intended for this purpose, regulators shall be removed and valve protection caps put in place before cylinders are moved.

(7) A suitable cylinder truck, chain, or other steadying device shall be used to keep cylinders from being knocked over while in use.

(8) When work is finished, when cylinders are empty, or when cylinders are moved at any time, the cylinder valve shall be closed.

(9) Acetylene cylinders shall be secured in an upright position at all times except, if necessary, for short periods of time while cylinders are actually being hoisted or carried.

(b) *Placing cylinders.* (1) Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag, or flame will not reach them. When this is impractical, fire resistant shields shall be provided.

(2) Cylinders shall be placed where they cannot become part of an electrical circuit. Electrodes shall not be struck against a cylinder to strike an arc.

(3) Fuel gas cylinders shall be placed with valve end up whenever they are in use. They shall not be placed in a location where they would be subject to open flame, hot metal, or other sources of artificial heat.

(4) Cylinders containing oxygen or acetylene or other fuel gas shall not be taken into confined spaces.

(c) *Treatment of cylinders.* (1) Cylinders, whether full or empty, shall not be used as rollers or supports.

(2) No person other than the gas supplier shall attempt to mix gases in a cylinder. No one except the owner of the cylinder or person authorized by him, shall refill a cylinder. No one shall use a cylinder's contents for purposes other than those intended by the supplier. Only cylinders bearing Interstate Commerce Commission, Department of Transportation, identification and inspection markings shall be used.

(3) No damaged or defective cylinder shall be used.

(d) *Use of fuel gas.* The employer shall thoroughly instruct employees in the safe use of fuel gas, as follows:

(1) Before a regulator to a cylinder valve is connected, the valve shall be opened slightly and closed immediately. (This action is generally termed "cracking" and is intended to clear the valve of dust or dirt that might otherwise enter the regulator.) The person cracking the valve shall stand to one side of the outlet, not in front of it. The valve of a fuel gas cylinder shall not be cracked where the gas would reach welding work, sparks, flame, or other possible sources of ignition.

(2) The cylinder valve shall always be opened slowly to prevent damage to the regulator. For quick closing, valves on fuel gas cylinders shall not be opened more than 1½ turns. When a special wrench is required, it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel gas flow can be shut off quickly in case of an emergency. In the case of manifolded or coupled cylinders, at least one such wrench shall always be available for immediate use. Nothing shall be placed on top of a fuel gas cylinder, when in use, which may damage the safety device or interfere with the quick closing of the valve.

(3) Fuel gas shall not be used from cylinders through torches or other devices which are equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

(4) Before a regulator is removed from a cylinder valve, the cylinder valve shall always be closed and the gas released from the regulator.

(5) If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, the valve shall be closed and the gland nut tightened. If this action does not stop the leak, the use of the cylinder shall be discontinued, and it shall be properly tagged and removed from the work area. In the event that fuel gas should leak from the cylinder valve, rather than from the valve stem, and the gas cannot be shut off, the cylinder shall be properly tagged and removed from the work area. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder need not be removed from the work area.

(6) If a leak should develop at a fuse plug or other safety device, the cylinder shall be removed from the work area.

(e) *Fuel gas and oxygen manifolds.* (1) Fuel gas and oxygen manifolds shall bear the name of the substance they contain in letters at least 1-inch high which shall be either painted on the manifold or on a sign permanently attached to it.

(2) Fuel gas and oxygen manifolds shall be placed in safe and accessible locations in the open air. They shall not be located within enclosed spaces.

(3) Manifold hose connections, including both ends of the supply hose that lead to the manifold, shall be such that the hose cannot be interchanged between fuel gas and oxygen manifolds and supply header connections. Adapters shall not be used to permit the interchange of hose. Hose connections shall be kept free of grease and oil.

(4) When not in use, manifold and header hose connections shall be capped.

(5) Nothing shall be placed on top of a manifold, when in use, which will damage the manifold or interfere with the quick closing of the valves.

(f) *Hose.* (1) Fuel gas hose and oxygen hose shall be easily distinguishable from each other. The contrast may be

made by different colors or by surface characteristics readily distinguishable by the sense of touch. Oxygen and fuel gas hoses shall not be interchangeable. A single hose having more than one gas passage shall not be used. A wall failure would permit the flow of one gas into the other gas passage.

(2) When parallel sections of oxygen and fuel gas hose are taped together, not more than 4 inches out of 12 inches shall be covered by tape.

(3) All hose in use, carrying acetylene, oxygen, natural or manufactured fuel gas, or any gas or substance which may ignite or enter into combustion, or be in any way harmful to employees, shall be inspected at the beginning of each working shift. Defective hose shall be removed from service.

(4) Hose which has been subject to flashback, or which shows evidence of severe wear or damage, shall be tested to twice the normal pressure to which it is subject, but in no case less than 300 p.s.i. Defective hose, or hose in doubtful condition, shall not be used.

(5) Hose couplings shall be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.

(6) Boxes used for the storage of gas hose shall be ventilated.

(g) *Torches.* (1) Clogged torch tip openings shall be cleaned with suitable cleaning wires, drills, or other devices designed for such purpose.

(2) Torches in use shall be inspected at the beginning of each working shift for leaking shutoff valves, hose couplings, and tip connections. Defective torches shall not be used.

(3) Torches shall be lighted by friction lighters or other approved devices, and not by matches or from hot work.

(h) *Regulators and gauges.* Oxygen and fuel gas pressure regulators, including their related gauges, shall be in proper working order while in use.

(i) *Oil and grease hazards.* Oxygen cylinders and fittings shall be kept away from oil or grease. Cylinders, cylinder valves, couplings, regulators, hose, and apparatus shall be kept free from oil or greasy substances and shall not be handled with oily hands or gloves. Oxygen shall not be directed at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.

§ 1518.354 Arc welding and cutting.

(a) *Manual electrode holders.* (1) Only manual electrode holders which are specifically designed for arc welding and cutting, and are of a capacity capable of safely handling the maximum rated current required by the electrodes, shall be used.

(2) Any current-carrying parts passing through the portion of the holder which the arc welder or cutter grips in his hand, and the outer surfaces of the jaws of the holder, shall be fully insulated against the maximum voltage encountered to ground.

(b) *Welding cables and connectors.* (1) All arc welding and cutting cables shall be of the completely insulated, flexible type, capable of handling the maximum current requirements of the work in progress, taking into account the duty cycle under which the arc welder or cutter is working.

(2) Only cable free from repair or splices for a minimum distance of 10 feet from the cable end to which the electrode holder is connected shall be used, except that cables with standard insulated connectors or with splices whose insulating quality is equal to that of the cable are permitted.

(3) When it becomes necessary to connect or splice lengths of cable one to another, substantial insulated connectors of a capacity at least equivalent to that of the cable shall be used. If connections are effected by means of cable lugs, they shall be securely fastened together to give good electrical contact, and the exposed metal parts of the lugs shall be completely insulated.

(4) Cables in poor repair shall not be used. When a cable, other than the cable lead referred to in subparagraph (2) of this paragraph, becomes worn to the extent of exposing bare conductors, the portion thus exposed shall be protected by means of rubber and friction tape or other equivalent insulation.

(c) *Ground returns and machine grounding.* (1) A ground return cable shall have a safe current carrying capacity equal to or exceeding the specified maximum output capacity of the arc welding or cutting unit which it services. When a single ground return cable services more than one unit, its safe current-carrying capacity shall equal or exceed the total specified maximum output capacities of all the units which it services.

(2) Pipelines containing gases or flammable liquids, or conduits containing electrical circuits, shall not be used as a ground return.

(3) When a structure or pipeline is emloyed as a ground return circuit, it shall be determined that the required electrical contact exists at all joints. The generation of an arc, sparks, or heat at any point shall cause rejection of the structures as a ground circuit.

(4) When a structure or pipeline is continuously employed as a ground return circuit, all joints shall be bonded, and periodic inspections shall be conducted to ensure that no condition of electrolysis or fire hazard exists by virtue of such use.

(5) The frames of all arc welding and cutting machines shall be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current. Grounding circuits, other than by means of the structure, shall be checked to ensure that the circuit between the ground and the grounded power conductor has resistance low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.

(6) All ground connections shall be inspected to ensure that they are mechanically strong and electrically adequate for the required current.

(d) *Operating instructions.* Employers shall instruct employees in the safe means of arc welding and cutting as follows:

(1) When electrode holders are to be left unattended, the electrodes shall be removed and the holders shall be so placed or protected that they cannot make electrical contact with employees or conducting objects.

(2) Hot electrode holders shall not be dipped in water; to do so may expose the arc welder or cutter to electric shock.

(3) When the arc welder or cutter has occasion to leave his work or to stop work for any appreciable length of time, or when the arc welding or cutting machine is to be moved, the power supply switch to the equipment shall be opened.

(4) Any faulty or defective equipment shall be reported to the supervisor.

(5) Other requirements, as outlined in Article 360, National Electric Code, Electric Welders, shall be used when applicable.

(e) *Shielding.* Whenever practicable, all arc welding and cutting operations shall be shielded by noncombustible or flameproof screens which will protect employees and other persons working in the vicinity from the direct rays of the arc.

Subpart K—Electrical

§ 1518.400 General requirements.

(a) *Protection of employees.* (1) No employer shall permit an employee to work in such proximity to any part of an electric power circuit that he may contact the same in the course of his work unless the employee is protected against electric shock by deenergizing the circuit and grounding it or by guarding it by effective insulation or other means. In work areas where the exact location of underground electric power lines is unknown, workmen using jack-hammers, bars, or other hand tools which may contact a line shall be provided with insulated protective gloves.

(2) Before work is begun the employer shall ascertain by inquiry or direct observation, or by instruments, whether any part of an electric power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool, or machine into physical or electrical contact therewith. The employer shall post and maintain proper warning signs where such a circuit exists. He shall advise his employees of the location of such lines, the hazards involved and the protective measures to be taken.

(3) In existing installations no changes in circuit protection shall be made to increase load in excess of the load rating of the circuit wiring.

(b) *Lockout and tagging of circuits.* (1) Equipment or circuits that are deenergized shall be rendered inoperative and have tags attached at all points where such equipment or circuits can be energized.

(2) Controls that are to be deactivated during the course of work on energized or deenergized equipment or circuits shall be tagged.

(3) Tags shall be placed to identify plainly the equipment or circuits being worked on.

§ 1518.401 Grounding and bonding.

(a) *Portable and/or cord and plug-connected equipment.* (1) The noncurrent-carrying metal parts of portable and/or plug-connected equipment shall be grounded.

(2) Portable tools and appliances protected by an approved system of double insulation, or its equivalent, need not be grounded. Where such an approved system is employed, the equipment shall be distinctively marked.

(b) *Fixed equipment.* The noncurrent-carrying metal parts of fixed electrical equipment, including motors, generators, frames and tracks of electrically operated cranes, electrically driven machinery, etc., shall be grounded.

(c) *Effective grounding.* The path from circuits, equipment, structures, and conduit or enclosures to ground shall be permanent and continuous; have ample carrying capacity to conduct safely the currents liable to be imposed on it; and have impedance sufficiently low to limit the potential above ground and to result in the operation of the overcurrent devices in the circuit.

(d) *Ground resistance.* Driven rod electrodes shall, where practicable, have a resistance to ground not to exceed 25 ohms. Where the resistance is not as low as 25 ohms, two or more electrodes connected in parallel shall be used.

(e) *Testing of grounds.* Grounding circuits shall be checked to ensure that the circuit between the ground and the grounded power conductor has a resistance which is low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.

(f) *Ground fault interruption.* A ground fault interrupter, which will instantly disrupt the flow of current, should a ground fault develop on the system, such as breakdown of insulation, may be used if adequate grounding is important.

(g) *Extension cords.* Extension cords used with portable electric tools and appliances shall be of three-wire type.

(h) *Bonding.* (1) Where not effectively bonded or grounded by contact or connection, provision shall be made to prevent the accumulation of static electrical charges which may create a source of ignition in the presence of flammable vapors or gases.

(2) The nozzle of air, inert gas, and steam lines or hoses when used in the cleaning or ventilation of tanks and vessels that contain hazardous concentrations of flammable gases or vapors, shall be bonded to the tank or vessel shell. Bonding devices shall not be attached nor detached in hazardous concentrations of flammable gases or vapors.

(3) Conductors used for bonding and grounding stationary and moveable equipment shall be of ample size to carry the anticipated current.

(4) When attaching bonding and grounding clamps or clips, a secure and positive metal-to-metal contact shall be made. Such attachments shall be made before closures are opened and material movements are started and shall not be broken until after material movements are stopped and closures are made.

(i) *Temporary wiring.* All temporary wiring shall be installed in a safe and workmanlike manner. Individual circumstances will dictate the degree of hazard and will therefore determine the wiring method to be employed.

(j) *Construction site.* Every precaution shall be taken to make any necessary open wiring inaccessible to unqualified personnel. Lighting on barricades, fences, or sidewalks coverings shall be encased in a metal raceway.

(k) *Temporary lighting.* (1) Temporary lights shall be equipped with guards to prevent accidental contact with the bulb, except that guards are not required when the construction of the reflector is such that the bulb is deeply recessed.

(2) Temporary lights shall be equipped with heavy duty electric cords with connections and insulation maintained in safe condition. Temporary lights shall not be suspended by their electric cords unless cords and lights are designed for this means of suspension. Splices shall have insulation equal to that of the cable.

(3) Cords shall be kept clear of working spaces and walkways or other locations in which they are readily exposed to damage.

(4) Portable electric lighting used in moist and/or other hazardous locations, as for example, drums, tanks and vessels shall be operated at a maximum of 12 volts.

§ 1518.402 Equipment installation and maintenance.

(a) *Flexible cable and cords.* (1) Receptacles for attachment plugs shall be of approved, concealed contact type with a contact for extending ground continuity and shall be so designed and constructed that the plug may be pulled out without leaving any live parts exposed to accidental contact.

(2) Where different voltages, frequencies, or types of current (a.c. or d.c.) are to be supplied by portable cords, receptacles shall be of such design that attachment plugs used on such circuits are not interchangeable.

(3) Attachment plugs or other connectors supplying equipment at more than 300 volts shall be of the skirted type or otherwise so designed that arcs will be confined.

(4) Attachment plugs for use in work areas shall be so constructed that they will endure rough use and be equipped with a suitable cord grip to prevent strain on the terminal screws.

(5) Flexible cord shall be used only in continuous lengths without splice, except suitable molded or vulcanized splices may be used where properly made, and the insulation shall be equal to the cable being spliced.

(6) Trailing cables shall be protected from damage.

(7) Splices in trailing cable shall be mechanically strong components and insulated to retain the mechanical and dielectric strength of the original cable.

(8) Cable passing through work areas shall be covered or elevated to protect it from damage which would create a hazard to employees.

(9) Handlamps of the portable type shall be of the molded composition or other type approved for the purpose. Brass-shell, paper-lined lampholders shall not be used. Handlamps shall be equipped with a handle and a substantial guard over the bulb and attached to the lampholder or the handle.

(10) Worn or frayed electric cables shall not be used.

(11) Extension cords shall be protected against accidental damage as may be caused by traffic, sharp corners, or projections and pinching in doors or elsewhere.

(12) Extension cords shall not be fastened with staples, hung from nails, or suspended by wire.

(b) *Overcurrent protection.* (1) Overcurrent protection shall be provided by fuses or circuit breakers for each feeder and branch circuit, and shall be based on the current-carrying capacity of the conductors supplied and the power load being used.

(2) No overcurrent device shall be placed in any permanently grounded conductor, except where the overcurrent device simultaneously opens all conductors of the circuit or for motor running protection.

(3) When fuses are installed or removed with one or both terminals energized, special tools insulated for the voltage shall be used.

(c) *Switches, circuit breakers, and disconnecting means.* (1) Each disconnecting means for motors and appliances, and each service feeder or branch circuit at the point where it originates, shall be legibly marked to indicate its purpose unless located and arranged so the purpose is evident.

(2) Disconnecting means shall be located or shielded so that employees will not be injured.

(3) Boxes for disconnecting means shall be securely and rigidly fastened to the surface upon which they are mounted and fitted with covers.

(4) Boxes and disconnecting means installed in damp or wet locations shall be waterproof to the extent that water does not enter or accumulate.

(d) *Transformers.* (1) Energized transformers shall be provided with enclosures. Enclosures made of metal shall be grounded.

(2) Entrance to such locations shall be kept locked.

(3) Signs indicating danger and prohibiting unauthorized entrance shall be displayed at entrances.

(e) *Welding and cutting equipment.* Welding and cutting equipment shall meet the requirements specified in Subparts F and J of this part.

§ 1518.403 Battery rooms and battery charging.

(a) *General requirements.* (1) Batteries of the nonsealed type shall be located in separate rooms or enclosures

so arranged as to prevent the escape into other rooms of objectionable quantities of electrolyte spray.

(2) Ventilation shall be provided to ensure diffusion of the gases from the battery to prevent the accumulation of an explosive mixture.

(3) Racks and trays shall be substantial and treated to be resistant to the electrolyte.

(4) Floors shall be of acid resistant construction or be protected from acid accumulations.

(5) Face shields, aprons, and rubber gloves shall be provided for workmen handling acids or batteries.

(6) Facilities for quick drenching of the eyes and body shall be provided within 25 feet of the work area for emergency use.

(7) Facilities shall be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from gassing batteries.

(b) *Charging.* (1) Battery charging installations shall be located in areas designated for that purpose.

(2) When charging batteries, the vent caps shall be kept in place to avoid electrolyte spray. Care shall be taken to assure that vent caps are functioning.

§ 1518.404 Hazardous locations.

(a) General: For the purpose of this section, hazardous locations are defined as follows:

(1) Class I Locations—Class I Locations are those in which flammable gases or vapors are or may be present in quantities sufficient to produce explosive or ignitable mixtures.

(2) Class II Locations—Class II Locations are those which are hazardous because of the presence of combustible dust.

(3) Class III Locations—Class III Locations are those which are hazardous because of the presence of easily ignitable fibers or flyings, but in which such fibers or flyings are not likely to be in suspension in air in quantities sufficient to produce ignitable mixtures.

(4) See the National Electrical Code for further definition of divisions 1 and 2 for each class.

(b) All wiring, components, and utilization equipment used in a hazardous location shall be listed by the Underwriters' Laboratories Inc., or approved by the Factory Mutual Engr. Corp. for the use in the applicable class location.

(c) Equipment approved for a specific hazardous location shall not be installed or intermixed with equipment approved for another specific hazardous location.

(d) Contractor shall ensure that all wiring components and utilization equipment are maintained as vapor, dust, or fiber tight as contemplated by their approvals. There shall be no loose or missing screws, gaskets, threaded connections, or other impairments to this tight condition.

§ 1518.405 Definitions.

(a) "Approved"—electrical wire, apparatus, and equipment in temporary or permanent use shall be of a type approved by the Underwriters' Laboratories, Inc., or Factory Mutual Engr. Corp. for the specific application. In the absence of an enforcing authority, compliance with the applicable requirements of the National Electrical Code shall constitute approval for equipment and installation.

(b) "Bonding jumper"—a conductor to assure the required electrical conductivity between metal parts required to be electrically connected.

(c) "Branch circuits"—that portion of a wiring system extending beyond the final overcurrent device protecting the circuit. (A device not approved for branch circuit protection, such as thermal cutout or motor overload protective device, is not considered as the overcurrent device protecting the circuit.)

(d) "Circuit breaker"—a device designed to open and close a circuit by manual means, and to open the circuit automatically on a predetermined overload of current, without injury to itself when properly applied within its rating.

(e) "Exposed" (as applied to live parts)—means that a live part can be inadvertently touched or approached nearer than a safe distance by a person. It is applied to parts not suitably guarded, isolated, or insulated.

(f) "Ground"—a conducting connection, whether intentional or accidental, between an electrical circuit or equipment and earth, or to some conducting body which serves in place of the earth.

(g) "Grounded"—connected to earth or to some conducting body which serves in place of the earth.

(h) "Hazard"—is considered to include casualty, fire, and shock when applicable.

(i) "Raceway"—any channel for loosely holding wires or cables in interior work which is designed expressly and used solely for this purpose. Raceways may be of metal, wood, or insulating material, and the term includes wood and metal moldings consisting of a backing and capping, and also metal ducts into which wires are to be pulled.

(j) "Shock hazard"—considered to exist at an accessible part in a circuit involving a potential of 125 volts or less, measured between the part and ground, or other accessible parts if the potential is more than 42.4 volts peak and the current through a 1,500-ohm load is more than 5 milliamperes.

(k) "Weatherproof"—so constructed or protected that exposure to the weather shall not interfere with successful operation.

Subpart L—Ladders and Scaffolding

§ 1518.450 Ladders.

(a) *General requirements.* (1) Except where either permanent or temporary stairways or suitable ramps or runways are provided, ladders described in this subpart shall be used to give safe access to all levels.

(2) The use of ladders with broken or missing rungs or steps, broken or split side rails, or other faulty or defective construction is prohibited. When ladders with such defects are discovered, they shall be immediately withdrawn from service. Inspection of metal ladders shall include checking for corrosion of interiors of open end hollow rungs.

(3) Manufactured portable wood ladders provided by the employer shall be in accordance with the provisions of the American National Standards Institute, A 14.1–1968, Safety Code for Portable Wood Ladders.

(4) Portable metal ladders shall be of strength equivalent to that of wood ladders. Manufactured portable metal ladders provided by the employer shall be in accordance with the provisions of the American National Standards Institute, A 14.2–1956, Safety Code for Portable Metal Ladders.

(5) Fixed ladders shall be in accordance with the provisions of the American National Standards Institute, A 14.3–1956, Safety Code for Fixed Ladders.

(6) Portable ladder feet shall be placed on a substantial base, and the area around the top and bottom of the ladder shall be kept clear.

(7) Portable ladders shall be used at such a pitch that the horizontal distance from the top support to the base will not be greater than one-fourth the vertical distance between these points.

(8) Ladders shall not be placed in passageways, doorways, driveways, or any location where they may be displaced by activities being conducted on any other work, unless protected by barricades or guards.

(9) The side rails shall extend not less than 36 inches above the landing. When this is not practical, grab rails, which provide a secure grip for an employee moving to or from the point of access, shall be installed.

(10) Portable ladders in use shall be tied, blocked, or otherwise secured to prevent their being displaced.

(11) Portable metal ladders shall not be used near electrical conductors, nor for electric arc welding operations, nor in corrosive environments, which could adversely affect the metal.

(b) *Job-made ladders.* (1) Job-made ladders shall be constructed for intended use. If a ladder is to provide the only means of access or exit from a working area for 25 or more employees, or simultaneous two-way traffic is expected, a double cleat ladder shall be installed.

(2) Double cleat ladders shall not exceed 24 feet in length.

(3) Single cleat ladders shall not exceed 30 feet in length between supports (base and top landing). If ladders are to connect different landings, or if the length required exceeds this maximum length, two or more separate ladders shall be used, offset with a platform between each ladder. Guardrails and toeboards shall be erected on the exposed sides of the platforms. (See § 1518.451 (a)(5).)

(4) The width of single cleat ladders shall be at least 15 inches, but not more than 20 inches between rails at the top.

(5) Side rails shall be parallel or flared top to bottom by not more than one-quarter of an inch for each 2 feet of length.

(6) Wood side rails of ladders having cleats shall be not less than 1⅝ inches thick and 3⅝ inches deep (2 inches by 4 inches nominal) when made of Group 2 or Group 3 woods. Wood side rails of Group 4 woods may be used in the same cross-section of dimensions for cleat ladders up to 20 feet in length.

AVERAGE DENSITIES OF VARIOUS SPECIES OF WOOD FOR USE IN LADDERS

Species	Density (lbs./ft.³)	Species	Density (lbs./ft.³)
GROUP 1			
White ash	41	Hard maple	42
Beech	43	Red maple	36
Birch	44	Red oak	43
Rock elm	43	White oak	46
Hickory	50	Pecan	46
Locust	47	Persimmon	50
GROUP 2			
Douglas fir (coast region)	34	Southern yellow pine	37
Western larch	38		
GROUP 3			
Red alder	28	Gum	34
Oregon ash	38	West Coast hemlock	30
Pumpkin ash	37	Magnolia	35
Alaska cedar	31	Oregon maple	34
Port Orford cedar	30	Norway pine	31
Cucumber	34	Poplar	28
Cypress	32	Redwood	25
Soft elm	36	Eastern spruce	28
Douglas fir (Rocky Mountain type)	30	Sitka spruce	28
Noble fir	27	Sycamore	35
		Tamarack	37
		Tupelo	35
GROUP 4			
Aspen	27	Eastern hemlock	28
Basswood	25	Holly	39
Buckeye	25	Soft maple	33
Butternut	27	Lodgepole pine	29
Incense cedar	25	Idaho white pine	28
Western red cedar	23	Northern white pine	25
Black cottonwood	24	Ponderosa pine	28
White fir	26	Sugar pine	26
Hackberry	37		

(7) It is preferable that side rails be continuous. If splicing is necessary to attain the required length however, the splice must develop the full strength of a continuous side rail of the same length.

(8) 2-inch by 4-inch lumber shall be used for side rails of single cleat ladders up to 16 feet long; 3-inch by 6-inch lumber shall be used for single cleat ladders from 16 to 30 feet in length.

(9) 2-inch by 4-inch lumber shall be used for side and middle rails of double cleat ladders up to 12 feet in length; 2-inch by 6-inch lumber for double cleat ladders from 12 to 24 feet in length.

(10) Wood cleats shall have the following minimum dimensions when made of Group 1 woods:

Length of cleat (Inches)	Thickness (inches)	Width (inches)
Up to and including 20	2⅝₃₂	3
Over 20 and up to and including 30	2⅝₃₂	3¾

(11) Cleats may be made of species of any other group provided that the cross-sectional dimensions specified for Group I species are increased by the factors shown below (based on the following percentages) for the species group of which the cleats are to be made.

FACTOR FOR INCREASE IN

Species group	Width and thickness	Width only (thickness unchanged)
1	1.00	1.00
2	1.03	1.05
3	1.11	1.19
4	1.17	1.26

(12) Cleats shall be inset into the edges of the side rails one-half inch, or filler blocks shall be used on the rails between the cleats. The cleats shall be secured to each rail with three 10d common wire nails or other fasteners of equivalent strength. Cleats shall be uniformly spaced, 12 inches top-to-top.

§ 1518.451 Scaffolding.

(a) *General requirements.* (1) Scaffolds shall be erected in accordance with requirements of this section.

(2) The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks, shall not be used to support scaffolds or planks.

(3) No scaffold shall be erected, moved, dismantled, or altered except under the supervision of competent persons.

(4) Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 5 feet above the ground or floor, except needle beam scaffolds and floats.

(5) Guardrails shall be 2- x 4-inches, or the equivalent, approximately 42 inches high, with a midrail, when required. Supports shall be at intervals not to exceed 10 feet. Toeboards shall be a minimum of 4 inches in height.

(6) Where persons are required to work or pass under the scaffold, scaffolds shall be provided with a screen between the toeboard and the guardrail, extending along the entire opening, consisting of No. 19 gauge U.S. Standard wire ½-inch mesh, or the equivalent.

(7) Where the structure prevents or this subpart does not require guardrail, employees working more than 5 feet above solid surfaces shall be protected by safety belts and lifelines meeting the requirements of § 1518.104.

(8) Scaffolds and their components shall be capable of supporting without failure at least 4 times the maximum intended load.

(9) Any scaffold including accessories such as braces, brackets, trusses, screw legs, ladders, etc. damaged or weakened from any cause shall be immediately repaired or replaced.

(10) All load-carrying timber members of scaffold framing shall be a minimum of 1,500 fiber (Stress Grade) construction grade lumber. All dimensions are nominal sizes as provided in the American Lumber Standards, except that where rough sizes are noted, only rough or undressed lumber of the size specified will satisfy minimum requirements.

(11) All planking shall be Scaffold Grade as recognized by approved grading rules for the species of wood used. The maximum permissible spans for 2- x 9-inch or wider planks shall be as shown in the following:

MATERIAL

	Full thickness undressed lumber			Nominal thickness lumber [1]	
Working load (p.s.f.)	25	50	75	25	50
Permissible span (ft.)	10	8	6	8	6

[1] Nominal thickness lumber not recommended for heavy duty use.

(12) The maximum permissible span for 1¼- x 9-inch or wider plank of full thickness shall be 4 feet with medium duty loading of 50 p.s.f.

(13) All planking or platforms shall be overlapped (minimum 12 inches), or secured from movement.

(14) An access ladder or equivalent safe access shall be provided.

(15) Scaffold planks shall extend over their end supports not less than 6 inches nor more than 12 inches.

(16) The poles, legs, or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement.

(17) Overhead protection shall be provided for men on a scaffold exposed to overhead hazards.

(18) Slippery conditions on scaffolds shall be eliminated as soon as possible after they occur.

(19) No welding, burning, riveting, or open flame work shall be performed on any staging suspended by means of fiber or synthetic rope. Only treated or protected fiber or synthetic ropes shall be used for or near any work involving the use of corrosive substances or chemicals.

(20) Wire, synthetic, or fiber rope used for scaffold suspension shall be capable of supporting at least 6 times the intended load.

(21) The use of shore pump jack, or lean-to scaffolds is prohibited.

(b) *Wood pole scaffolds.* (1) Scaffold poles shall bear on a foundation of sufficient size and strength to spread the load from the pole over a sufficient area to prevent settlement. All poles shall be set plumb.

(2) Where wood poles are spliced, the ends shall be squared and the upper section shall rest squarely on the lower section. Wood splice plates shall be provided on at least two adjacent sides and shall be not less than 4 feet in length, overlapping the abutted ends equally, and have the same width and not less than the cross-sectional area of the pole. Splice plates or other materials of equivalent strength may be used.

(3) Independent pole scaffolds shall be set as near to the wall of the building as practicable.

(4) All pole scaffolds shall be securely guyed or tied to the building or structure. Where the height or length exceeds 25 feet, the scaffold shall be secured at

intervals not greater than 25 feet vertically and horizontally.

(5) Putlogs or bearers shall be set with their greater dimension vertical, long enough to project over the ledgers of the inner and outer rows of poles at least 3 inches for proper support.

(6) Every wooden putlog on single pole scaffolds shall be reinforced with a 3/16- x 2-inch steel strip, or equivalent, secured to its lower edge throughout its entire length.

(7) Ledgers shall be long enough to extend over two pole spaces. Ledgers shall not be spliced between the poles. Ledgers shall be reinforced by bearing blocks securely nailed to the side of the pole to form a support for the ledger.

(8) Diagonal bracing shall be provided to prevent the poles from moving in a direction parallel with the wall of the building, or from buckling.

(9) Cross bracing shall be provided between the inner and outer sets of poles in independent pole scaffolds. The free ends of pole scaffolds shall be cross braced.

(10) Full diagonal face bracing shall be erected across the entire face of pole scaffolds in both directions. The braces shall be spliced at the poles.

(11) Platform planks shall be laid with their edges close together so the platform will be tight with no spaces through which tools or fragments of material can fall.

(12) Where planking is lapped, each plank shall lap its end supports at least 12 inches. Where the ends of planks abut each other to form a flush floor, the butt joint shall be at the centerline of a pole. The abutted ends shall rest on separate bearers. Intermediate beams shall be provided where necessary to prevent dislodgment of plans due to deflection, and the ends shall be secured to prevent their dislodgment.

(13) When a scaffold materially changes its direction, the platform planks shall be laid to prevent tipping. The planks that meet the corner putlog at an angle shall be laid first, extending over the diagonally placed putlog far enough to have a good safe bearing, but not far enough to involve any danger from tipping. The planking running in the opposite direction at an angle shall be laid so as to extend over and rest on the first layer of planking.

(14) When moving platforms to the next level, the old platform shall be left undisturbed until the new putlogs or bearers have been set in place, ready to receive the platform planks.

(15) Guardrails, not less than 2 x 4 inches or the equivalent, approximately 42 inches high, with a midrail, of 1- x 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section, when required.

(16) All wood pole scaffolds 60 feet or less in height shall be constructed and erected in accordance with Tables L–1 to 6. If they are over 60 feet in height, they shall be designed by a licensed professional engineer competent in this field, and it shall be constructed and erected in accordance with such design.

TABLE L–1—MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS, LIGHT DUTY

	Maximum height of scaffold	
	20 ft.	60 ft.
Uniformly distributed load	Not to exceed 25 p.s.f.	
Poles or uprights	2 x 4 in.	4 x 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.	10 ft. 0 in.
Maximum width of scaffold	5 ft. 0 in.	5 ft. 0 in.
Bearers or putlogs to 30 ft. 0 in. width	2 x 4 in.	2 x 4 in.
Bearers or putlogs to 5 ft. 0 in. width	2 x 6 in. or 3 x 4 in.	2 x 6 in. or 3 x 4 in. (rough).
Ledgers	1 x 4 in.	1¼ x 9 in.
Planking	1¼ x 9 in. (rough)	2 x 9 in.
Vertical spacing of horizontal members	7 ft. 0 in.	7 ft. 0 in.
Bracing, horizontal and diagonal	1 x 4 in.	1 x 4 in.
Tie-ins	1 x 4 in.	1 x 4 in.
Toeboards	4 in. high (minimum)	4 in. high (minimum).
Guardrail	2 x 4 in.	2 x 4 in.

All members except planking are used on edge.

TABLE L–2—MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS—MEDIUM DUTY

Uniformly distributed load.	Not to exceed 50 p.s.f.
Maximum height of scaffold.	60 ft.
Poles or uprights	4 x 4 in.
Pole spacing (longitudinal).	8 ft. 0 in.
Maximum width of scaffold.	5 ft. 0 in.
Bearers or putlogs	2 x 9 in. or 3 x 4 in.
Spacing of bearers or putlogs.	3 ft. 4 in.
Ledgers	2 x 9 in.
Vertical spacing of horizontal members.	9 ft. 0 in.
Bracing, horizontal	1 x 6 in. or 1¼ x 4 in.
Bracing, diagonal	1 x 4 in.
Tie-ins	1 x 4 in.
Planking	2 x 9 in.
Toeboards	4-in. high (minimum).
Guardrail	2 x 4 in.

All members except planking are used on edge.

TABLE L–3—MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS—HEAVY DUTY

Uniformly distributed load.	Not to exceed 75 p.s.f.
Maximum height of scaffold.	60 ft.
Poles or uprights	4 x 4 in.
Pole spacing (longitudinal).	6 ft. 0 in.
Maximum width of scaffold.	5 ft. 0 in.
Bearers or putlogs	2 x 9 in. or 3 x 5 in. (rough).
Spacing of bearers or putlog.	6 ft. 0 in.
Ledgers	2 x 9 in.
Vertical spacing of horizontal members.	6 ft. 6 in.
Bracing, horizontal and diagonal.	2 x 4 in.
Tie-ins	1 x 4 in.
Planking	2 x 9 in.
Toeboards	4-in. high (minimum).
Guardrail	2 x 4 in.

All members except planking are used on edge.

TABLE L–4—MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS LIGHT DUTY

	Maximum height of scaffold	
	20 ft.	60 ft.
Uniformly distributed load	Not to exceed 25 p.s.f.	
Poles or uprights	2 x 4 in.	4 x 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.	10 ft. 0 in.
Pole spacing (transverse)	6 ft. 0 in.	10 ft. 0 in.
Ledgers	1¼ x 4 in.	1¼ x 9 in.
Bearers to 3 ft. 0 in. span	2 x 4 in.	2 x 4 in.
Bearers to 10 ft. 0 in. span	2 x 6 in. or 3 x 4 in.	2 x 9 (rough) or 3 x 8 in.
Planking	1¼ x 9 in.	2 x 9 in.
Vertical spacing of horizontal members	7 ft. 0 in.	7 ft. 0 in.
Bracing, horizontal and diagonal	1 x 4 in.	1 x 4 in.
Tie-ins	1 x 4 in.	1 x 4 in.
Toeboards	4 in. high	4 in. high (minimum).
Guardrail	2 x 4 in.	2 x 4 in.

All members except planking are used on edge.

TABLE L–5—MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS—MEDIUM DUTY

Uniformly distributed load.	Not to exceed 50 p.s.f.
Maximum height of scaffold.	60 ft.
Poles or uprights	4 x 4 in.
Pole spacing (longitudinal).	8 ft. 0 in.
Pole spacing (transverse).	8 ft. 0 in.
Ledgers	2 x 9 in.
Vertical spacing of horizontal members.	6 ft. 0 in.
Spacing of bearers	8 ft. 0 in.
Bearers	2 x 9 in. (rough) or 2 x 10 in.
Bracing, horizontal	1 x 6 in. or 1¼ x 4 in.
Bracing, diagonal	1 x 4 in.
Tie-ins	1 x 4 in.
Planking	2 x 9 in.
Toeboards	4-in. high (minimum).

Guardrail	2 x 4 in.

All members except planking are used on edge.

TABLE L–6—MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS—HEAVY DUTY

Uniformly distributed load.	Not to exceed 75 p.s.f.
Maximum height of scaffold.	60 ft.
Poles or uprights	4 x 4 in.
Pole spacing (longitudinal).	6 ft. 0 in.
Pole spacing (transverse).	8 ft. 0 in.
Ledgers	2 x 9 in.
Vertical spacing of horizontal members.	4 ft. 6 in.
Bearers	2 x 9 in. (rough).
Bracing, horizontal and diagonal.	2 x 4 in.
Tie-ins	1 x 4 in.
Planking	2 x 9 in.
Toeboards	4-in. high (minimum).
Guardrail	2 x 4 in.

All members except planking are used on edge.

(c) *Tube and coupler scaffolds.* (1) A light duty tube and coupler scaffold shall have all posts, bearers, runners, and bracing of nominal 2-inch O.D. steel tubing. The posts shall be spaced no more than 6 feet apart by 10 feet along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load. No dissimilar metals shall be used together.

(2) A medium duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2-inch O.D. steel tubing. Posts spaced not more than 6 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2½-inch O.D. steel tubing. Posts spaced not more than 5 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2-inch O.D. steel tubing. Other structural metals, when used, must be designed to carry an equivalent load. No dissimilar metals shall be used together.

(3) A heavy duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2-inch O.D. steel tubing, with the posts spaced not more than 6 feet by 6 feet 6 inches. Other structural metals, when used, must be designed to carry an equivalent load. No dissimilar metals shall be used together.

(4) Tube and coupler scaffolds shall be limited in heights and working levels to those permitted in Tables L–7, 8, and 9. Drawings and specifications of all tube and coupler scaffolds above the limitations in Tables L–7, 8, and 9 shall be designed by a licensed professional engineer competent in this field.

(5) All tube and coupler scaffolds shall be constructed and erected to support four times the maximum intended loads, as set forth in Tables L–7, 8, and 9, or as set forth in the specifications by a licensed professional engineer competent in this field.

TABLE L–7—TUBE AND COUPLER SCAFFOLDS LIGHT DUTY

Uniformly distributed load	Not to exceed 25 p.s.f.
Post spacing (longitudinal)	10 ft. 0 in.
Post spacing (transverse)	6 ft. 0 in.

Working levels	Additional planked levels	Maximum height
1	8	125 ft.
2	4	125 ft.
3	0	91 ft. 0 in.

TABLE L–8—TUBE AND COUPLER SCAFFOLDS MEDIUM DUTY

Uniformly distributed load	Not to exceed 50 p.s.f.
Post spacing (longitudinal)	8 ft. 0 in.
Post spacing (transverse)	6 ft. 0 in.

Working levels	Additional planked levels	Maximum height
1	6	125 ft.
2	0	78 ft. 0 in.

Table L–9—Tube and Coupler Scaffolds Heavy Duty

Uniformly distributed load	Not to exceed 75 p.s.f.
Post spacing (longitudinal)	6 ft. 6 in.
Post spacing (traverse)	6 ft. 0 in.

Working levels	Additional planked levels	Maximum height
1	6	125 ft.

(6) Posts shall be accurately spaced, erected on suitable bases, and maintained plumb.

(7) Runners shall be erected along the height. Runners shall be interlocked to the inside and the outside posts at even heights. Runners shall be interlocked to form continuous lengths and coupled to each post. The bottom runners shall be located as close to the base as possible. Runners shall be placed not more than 6 feet 6 inches on centers.

(8) Bearers shall be installed transversely between posts and shall be securely coupled to the posts bearing on the runner coupler. When coupled directly to the runners, the coupler must be kept as close to the posts as possible.

(9) Bearers shall be at least 4 inches but not more than 12 inches longer than the post spacing or runner spacing.

(10) Cross bracing shall be installed across the width of the scaffold at least every third set of posts horizontally and every fourth runner vertically. Such bracing shall extend diagonally from the inner and outer runners upward to the next outer and inner runners.

(11) Longitudinal diagonal bracing shall be installed at approximately a 45° angle from near the base of the first outer post upward to the extreme top of the scaffold. Where the longitudinal length of the scaffold permits, such bracing shall be duplicated beginning at every fifth post. In a similar manner, longitudinal diagonal bracing shall also be installed from the last post extending back and upward toward the first post. Where conditions preclude the attachment of this bracing to the posts, it may be attached to the runners.

(12) The entire scaffold shall be tied to and securely braced against the building at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(13) Guardrails, not less than 2 x 4 inches or the equivalent, approximately 42 inches high, with a midrail of 1- x 4-inch lumber or equivalent, and toeboard, shall be installed at all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section.

(d) *Tubular welded frame scaffolds.* (1) Metal tubular frame scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc., shall be designed, constructed, and erected to safety support four times the maximum intended load.

(2) Spacing of panels or frames shall be consistent with the loads imposed.

(3) Scaffolds shall be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally, and the cross braces shall be of such length as will automatically square and aline vertical members so that the erected scaffold is always plumb, square, and rigid. All brace connections shall be made secure.

(4) Scaffold legs shall be set on adjustable bases or plain bases placed on mud sills or other foundations adequate to support the maximum intended load.

(5) The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alinement of the legs.

(6) Where uplift may occur, panels shall be locked together vertically by pins or other equivalent suitable means.

(7) To prevent movement, the scaffold shall be secured to the building or structure at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(8) Maximum permissible spans of planking shall be in conformity with paragraph (a)(11) of this section.

(9) Drawings and specifications for all frame scaffolds over 125 feet in height above the base plates shall be designed by a licensed professional engineer.

(10) Guardrails, not less than 2 x 4 inches or the equivalent, and approximately 42 inches high, with a midrail, of 1- x 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section.

(e) *Manually propelled mobile scaffolds.* (1) When free-standing mobile scaffold towers are used, the height shall not exceed four times the minimum base dimension.

(2) Casters shall be properly designed for strength and dimensions to support

four times the maximum intended load. All casters shall be provided with a positive locking device to hold the scaffold in position.

(3) Scaffolds shall be properly braced by cross bracing and horizontal bracing conforming with paragraph (d)(3) of this section.

(4) Platforms shall be tightly planked for the full width of the scaffold except for necessary entrance opening. Platforms shall be secured in place.

(5) A ladder or stairway shall be provided for proper access and exit and shall be affixed or built into the scaffold and so located that when in use it will not have a tendency to tip the scaffold. A landing platform must be provided at intervals not to exceed 35 feet.

(6) The force necessary to move the mobile scaffold shall be applied near or as close to the base as practicable and provision shall be made to stabilize the tower during movement from one location to another. Scaffolds shall only be moved on level floors, free of obstructions and openings.

(7) Employees shall be prohibited from staying on the scaffold while it is being moved. All tools and materials shall be secured or removed from the platform before the mobile scaffold is moved.

(8) Scaffolds in use by any persons shall rest upon a suitable footing and shall stand plumb. The casters or wheels shall be locked to prevent any movement.

(9) Mobile scaffolds constructed of metal members shall also conform to applicable provisions of paragraphs (b), (c), or (d) of this section, depending on the material of which they are constructed.

(10) Guardrails not less than 2 x 4 inches or the equivalent, approximately 42 inches high, with a midrail, of 1- x 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section.

(f) *Elevating and rotating work platforms.* Applicable requirements of American National Standards Institute A92.9–1969, Vehicle Mounted Elevating and Rotating Work Platforms, shall be met for such equipment in use.

(g) *Outrigger scaffolds.* (1) Outrigger beams shall extend not more than 6 feet beyond the face of the building. The inboard end of outrigger beams, measured from the fulcrum point to anchorage point, shall be not less than 1½ times the outboard end in length. The beams shall rest on edge, the sides shall be plumb, and the edges shall be horizontal. The fulcrum point of the beam shall rest on a secure bearing at least 6 inches in each horizontal dimension. The beam shall be secured in place against movement and shall be securely braced at the fulcrum point against tipping.

(2) The inboard ends of outrigger beams shall be securely anchored either by means of struts bearing against sills in contact with the overhead beams or ceiling, or by means of tension members secured to the floor joists underfoot, or by both if necessary. The inboard ends of outrigger beams shall be secured against tipping and the entire supporting structure shall be securely braced in both directions to prevent any horizontal movement.

(3) Unless outrigger scaffolds are designed by a licensed professional engineer competent in this field, they shall be constructed and erected in accordance with Table L–10. Outrigger scaffolds, designed by a licensed professional engineer, shall be constructed and erected in accordance with such design.

TABLE L–10—MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF OUTRIGGER SCAFFOLDS

Maximum scaffold load.	Light duty	Medium duty
	25 p.s.f.	50 p.s.f.
Outrigger size	2 x 10 in	3 x 10 in.
Maximum outrigger spacing.	10 ft. 0 in	6 ft. 0 in.
Planking	2 x 9 in	2 x 9 in.
Guardrail	2 x 4 in	2 x 4 in.
Guardrail uprights	2 x 4 in	2 x 4 in.
Toeboards	4 in. (minimum).	4 in. (minimum).

(4) Planking shall be laid tight and shall extend to within 3 inches of the building wall. Planking shall be secured to the beams.

(5) Guardrails, not less than 2 x 4 inches or the equivalent, approximately 42 inches high, with a midrail of 1- x 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section.

(h) *Masons' adjustable multiple-point suspension scaffolds.* (1) The scaffold shall be capable of sustaining a working load of 50 pounds per square foot and shall not be loaded in excess of that figure. The platform shall be supported by outriggers at intervals not greater than 12 feet apart.

(2) The scaffold shall be provided with hoisting machines that meet the requirements of Underwriters' Laboratories.

(3) The platform shall be supported by wire ropes, capable of supporting at least 6 times the intended load, suspended from overhead outrigger beams.

(4) The scaffold outrigger beams shall consist of structural metal securely fastened or anchored to the frame or floor system of the building or structure.

(5) Each outrigger beam shall be equivalent in strength to at least a standard 7-inch, 15.3-pound steel I-beam, at least 15 feet long, and shall not project more than 6 feet 6 inches beyond the bearing point.

(6) Where the overhang exceeds 6 feet 6 inches, outrigger beams shall be composed of stronger beams or multiple beams and be installed under the supervision of a competent person.

(7) All outrigger beams shall be set and maintained with their webs in a vertical position.

(8) A stop bolt shall be placed at each end of every outrigger beam.

(9) The outrigger beam shall rest on suitable wood bearing blocks.

(10) The free end of the suspension wire ropes shall be equipped with proper size thimbles and secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four turns of wire rope shall at all times remain on the drum. The use of fiber rope is prohibited.

(11) Where a single outrigger beam is used, the steel shackles or clevises with which the wire ropes are attached to the outrigger beams shall be placed directly over the hoisting drums.

(12) The scaffold platform shall be equivalent in strength to at least 2-inch planking. (For maximum planking spans, see paragraph (a)(11) of this section.)

(13) When men are at work on the scaffold and an overhead hazard exists, overhead protection shall be provided on the scaffold, not more than 9 feet above the platform, consisting of 2-inch planking, or material of equivalent strength, laid tight, and extending not less than the width of the scaffold.

(14) Each scaffold shall be installed or relocated under the supervision of a competent person.

(15) Guardrails, not less than 2 x 4 inches or the equivalent, approximately 42 inches high, with a midrail, and toeboards, shall be installed at all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section.

(i) *(Swinging scaffolds) two-point suspension.* (1) Two-point suspension scaffold platforms shall be not less than 20 inches nor more than 36 inches wide overall. The platform shall be securely fastened to the hangers by U-bolts or by other equivalent means.

(2) The hangers of two-point suspension scaffolds shall be made of mild steel, or other equivalent materials, having a cross-sectional area capable of sustaining 4 times the maximum intended load, and shall be designed with a support for guardrail, intermediate rail, and toeboard.

(3) When hoisting machines are used on two-point suspension scaffolds, such machines shall be of a design tested and approved by Underwriters' Laboratories.

(4) The roof irons or hooks shall be of mild steel, or other equivalent material, or proper size and design, securely installed and anchored. Tiebacks of ¾-inch manila rope, or the equivalent, shall serve as a secondary means of anchorage, installed at right angles to the face of the building, whenever possible, and secured to a structurally sound portion of the building.

(5) Two-point suspension scaffolds shall be suspended by wire, synthetic, or fiber ropes capable of supporting at least 6 times the intended load.

(6) The sheaves of all blocks, consisting of at least one double and one single

block, shall fit the size and type of rope used.

(7) All wire ropes, fiber and synthetic ropes, slings, hangers, platforms, and other supporting parts shall be inspected before every installation. Periodic inspections shall be made while the scaffold is in use.

(8) On suspension scaffolds designed for a working load of 500 pounds, no more than two men shall be permitted to work at one time. On suspension scaffolds with a working load of 750 pounds, no more than three men shall be permitted to work at one time. Each employee shall be protected by an approved safety life belt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the employee in case of a fall. In order to keep the lifeline continuously attached, with a minimum of slack, to a fixed structure, the attachment point of the lifeline shall be appropriately changed as the work progresses.

(9) Two-point suspension scaffolds shall be securely lashed to the building or structure to prevent them from swaying. Window cleaners' anchors shall not be used for this purpose.

(10) The platform of every two-point suspension scaffold shall be one of the following types:

(i) *Ladder-type platforms.* The side stringer shall be of clear straight-grained spruce or materials of equivalent strength and durability. The rungs shall be of straight-grained oak, ash, or hickory, at least 1⅛ inch in diameter, with ⅞-inch tenons mortised into the side stringers at least seven-eighths inch. The stringers shall be tied together with tie rods not less than one-quarter inch in diameter, passing through the stringers and riveted up tight against washers on both ends. The flooring strips shall be spaced not more than five-eighths inch apart except at the side rails where the space may be 1 inch. Ladder-type platforms shall be constructed in accordance with Table L–11.

TABLE 1-11—SCHEDULE FOR LADDER-TYPE PLATFORMS

	Length of platform (feet)				
	12	14 and 16	18 and 20	22 and 24	28 and 30
Side Stringers, minimum cross section (finished sizes):					
At ends (inches)	1¼ x 2¾	1¾ x 2¾	1¼ x 3	1¼ x 3	1¼ x 3½.
At middle (inches)	1¼ x 3¾	1¾ x 3¾	1¾ x 4	1¾ x 4¼	1¼ x 5.
Reinforcing strip (minimum)	A ⅛x1½-inch steel reinforcing strip or its equivalent shall be attached to the side or underside, full length.				
Rungs	Rungs shall be 1⅛-inches minimum diameter with at least ⅜-inch diameter tenons, and the maximum spacing shall be 12 inches center to center.				
Tie rods:					
Number (minimum)	3	4	4	5	6.
Diameter (minimum	¼ in	¼ in	¼ in	¼ in	¼ in.
Flooring, minimum finished size (inches)	⅛x2¾	⅛x2¾	⅛x2¾	⅛x2¾	⅛x2¾.

(ii) *Plank-type platforms.* Plank-type platforms shall be composed of not less than nominal 2- x 8-inch unspliced planks, properly cleated together on the underside, starting 6 inches from each end; intervals in between shall not exceed 4 feet. The plank-type platform shall not extend beyond the hangers more than 12 inches. A bar or other effective means shall be securely fastened to the platform at each end to prevent its slipping off the hanger. The span between hangers for plank-type platforms shall not exceed 10 feet.

(iii) *Beam-type platforms.* Beam platforms shall have side stringers of lumber not less than 2 x 6 inches set on edge. The span between hangers shall not exceed 12 feet when beam platforms are used. The flooring shall be supported on 2- x 6-inch cross beams, laid flat and set into the upper edge of the stringers with a snug fit, at intervals of not more than 4 feet, securely nailed in place. The flooring shall be of 1- x 6-inch material properly nailed. Floor boards shall not be spaced more than one-half inch apart.

(iv) *Light metal-type platforms.* When used, shall be tested and listed according to Underwriters' Laboratories.

(11) Guardrails, not less than 2 x 4 inches, or the equivalent, approximately 42 inches high, with a midrail, and toeboards, shall be installed at all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section.

(j) *Stone setters' adjustable multiple-point suspension scaffolds.* (1) The scaffold shall be capable of sustaining a working load of 25 pounds per square foot and shall not be overloaded. Scaffolds shall not be used for storage of stone or other heavy materials.

(2) When used, the hoisting machine and its supports shall be of a type tested and listed by Underwriters' Laboratories.

(3) The platform shall be securely fastened to the hangers by U-bolts or other equivalent means. (For materials and spans, see subdivision (ii) of paragraph (i)(10), Plank-Type Platforms, and Table L–11 of this section.)

(4) The scaffold unit shall be suspended from metal outriggers, iron brackets, wire rope slings, or iron hooks which will safely support the maximum intended load.

(5) Outriggers, when used, shall be set with their webs in a vertical position, securely anchored to the building or structure and provided with stop bolts at each end.

(6) The scaffold shall be supported by wire rope capable of supporting at least 6 times the intended load.

(7) The free ends of the suspension wire ropes shall be equipped with proper size thimbles, secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four turns of wire rope shall remain at the drum at all times.

(8) When two or more scaffolds are used on a building or structure, they shall not be bridged one to the other, but shall be maintained at even height with platforms abutting closely.

(9) Guardrails, not less than 2 x 4 inches or the equivalent, approximately 42 inches high, with a midrail, and toeboards, shall be installed at all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section.

(k) *Single-point adjustable suspension scaffolds.* (1) The scaffolding, including power units or manually operated winches, shall be of a type tested and listed by Underwriters' Laboratories.

(2) The power units may be either electrically or air motor driven.

(3) All power-operated gears and brakes shall be enclosed.

(4) In addition to the normal operating brake, all power-driven units shall have an emergency brake which engages automatically when the normal speed of descent is exceeded.

(5) The hoisting machines, cables, and equipment shall be regularly serviced and inspected.

(6) The units may be combined to form a two-point suspension scaffold. Such scaffold shall then comply with paragraph (i) of this section.

(7) The supporting cable shall be vertical for its entire length, and the basket shall not be swayed nor the cable fixed to any intermediate points to change the original path of travel.

(8) Suspension methods shall conform to applicable provisions of paragraphs (h) and (i) of this section.

(9) Guards, midrails, and toeboards shall completely enclose the cage or basket. Guardrails shall be no less than 2 x 4 inches or the equivalent, approximately 42 inches above the platform. Midrails shall be 1 x 6 inches or the equivalent, installed equidistant between the guardrail and the platform. Toeboards shall be a minimum of 4 inches in height.

(10) For additional details not covered in this paragraph, applicable technical portions of American National Standards Institute, A120, 1970, Power-Operated Devices for Exterior Building Maintenance Powered Platforms, shall be used.

(l) *Boatswain's chairs.* (1) The chair seat shall not be less than 12 x 24 inches, and 1-inch thickness. The seat shall be reinforced on the underside by cleats securely fastened to prevent the board from splitting.

(2) The two fiber rope seat slings shall be of ⅝-inch diameter, reeved through the four seat holes so as to cross each other on the underside of the seat.

(3) Seat slings shall be of at least ⅜-inch wire rope when an employee is conducting a heat-producing process, such as gas or arc welding.

(4) The employee shall be protected by a safety lifebelt and lifeline in accordance with § 1518.104. The attachment

point of the lifeline to the structure shall be appropriately changed as the work progresses.

(5) The tackle shall consist of correct size ball bearing or bushed blocks and properly spliced 5/8-inch diameter first-grade manila rope, or equivalent.

(6) The roof irons, hooks, or the object to which the tackle is anchored, shall be securely installed. Tiebacks, when used, shall be installed at right angles to the face of the building and securely fastened.

(m) *Carpenters' bracket scaffolds.* (1) the brackets shall consist of a triangular wood frame not less than 2 x 3 inches in cross section, or of metal of equivalent strength. Each member shall be properly fitted and securely joined.

(2) Each bracket shall be attached to the structure by means of one of the following:

(i) A bolt, no less than five-eighths inch in diameter, which shall extend through the inside of the building wall;

(ii) A metal stud attachment device;

(iii) Welding to steel tanks;

(iv) Hooking over a well-secured and adequately strong supporting member.

(3) The brackets shall be spaced no more than 10 feet apart.

(4) No more than two employees shall occupy any given 10 feet of a bracket scaffold at any one time. Tools and materials shall not exceed 75 pounds in addition to the occupancy.

(5) The platform shall consist of not less than two 2- x 9-inch nominal size planks extending not more than 12 inches or less than 6 inches beyond each end support.

(6) Guardrails, not less than 2 x 4 inches or the equivalent, approximately 42 inches high, with a midrail, or 1- x 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section.

(n) *Bricklayers' square scaffolds.* (1) The squares shall not exceed 5 feet in width and 5 feet in height.

(2) Members shall be not less than those specified in Table L–12.

TABLE L–12.—MINIMUM DIMENSIONS FOR BRICKLAYERS' SQUARE SCAFFOLD MEMBERS

Members	*Dimensions*
Bearers or horizontal members	2 x 6 in.
Legs	2 x 6 in.
Braces at corners	1 x 6 in.
Braces diagonally from center frame.	1 x 8 in.

(3) The squares shall be reinforced on both sides of each corner with 1- x 6-inch gusset pieces. They shall also have braces 1 x 8 inches on both sides running from center to center of each member, or other means to secure equivalent strength and rigidity.

(4) The squares shall be set not more than 5 feet apart for medium duty scaffolds, and not more than 8 feet apart for light duty scaffolds. Bracing, 1 x 8 inches, extending from the bottom of each square to the top of the next square, shall be provided on both front and rear sides of the scaffold.

(5) Platform planks shall be at least 2- x 9-inch nominal size. The ends of the planks shall overlap the bearers of the squares and each plank shall be supported by not less than three squares.

(6) Bricklayers' square scaffolds shall not exceed three tiers in height and shall be so constructed and arranged that one square shall rest directly above the other. The upper tiers shall stand on a continuous row of planks laid across the next lower tier and be nailed down or otherwise secured to prevent displacement.

(7) Scaffolds shall be level and set upon a firm foundation.

(o) *Horse scaffolds.* (1) Horse scaffolds shall not be constructed or arranged more than two tiers or 10 feet in height.

(2) The members of the horses shall be not less than those specified in Table L–13.

TABLE L–13—MINIMUM DIMENSIONS FOR HORSE SCAFFOLD MEMBERS

Members	*Dimensions*
Horizontal members or bearers.	3 x 4 in.
Legs	1¼ x 4½ in.
Longitudinal brace between legs.	1 x 6 in.
Gusset brace at top of legs	1 x 8 in.
Half diagonal braces	1¼ x 4½ in.

(3) Horses shall be spaced not more than 5 feet for medium duty and not more than 8 feet for light duty.

(4) When arranged in tiers, each horse shall be placed directly over the horse in the tier below.

(5) On all scaffolds arranged in tiers, the legs shall be nailed down or otherwise secured to the planks to prevent displacement or thrust and each tier shall be substantially cross braced.

(6) Horses or parts which have become weak or defective shall not be used.

(7) Guardrails, not less than 2 x 4 inches or the equivalent, approximately 42 inches high, with a midrail, of 1- x 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section.

(p) *Needle beam scaffold.* (1) Wood needle beams shall be not less than 4 x 6 inches in size, with the greater dimension placed in a vertical direction. Metal beams or the equivalent, conforming to paragraphs (a) (8) and (10) of this section, may be used and shall not be altered or moved horizontally while they are in use.

(2) Ropes or hangers shall be provided for supports. The span between supports on the needle beam shall not exceed 10 feet for 4- x 6-inch timbers. Rope supports shall be equivalent in strength to 1-inch diameter first-grade manila rope.

(3) The ropes shall be attached to the needle beams by a scaffold hitch or a properly made eye splice. The loose end of the rope shall be tied by a bowline knot or by a round turn and one-half hitch.

(4) The scaffold hitch shall be arranged so as to prevent the needle beam from rolling or becoming otherwise displaced.

(5) The platform span between the needle beams shall not exceed 8 feet when using 2-inch scaffold plank. For spans greater than 8 feet, platforms shall be designed based on design requirements for the special span. The overhang of each end of the platform planks shall be not less than 6 inches and not more than 12 inches.

(6) When needle beam scaffolds are used, the planks shall be secured against slipping.

(7) All unattached tools, bolts, and nuts used on needle beam scaffolds shall be kept in suitable containers, properly secured.

(8) One end of a needle beam scaffold may be supported by a permanent structural member conforming to paragraphs (a) (8) and (10) of this section.

(9) Each employee working on a needle beam scaffold shall be protected by a safety life belt, in accordance with § 1518.104.

(q) *Plasterers', decorators', and large area scaffolds.* (1) Plasterers', lathers', and ceiling workers' inside scaffolds shall be constructed in accordance with the general requirements set forth for independent wood pole scaffolds. (See paragraph (b) and Tables L–4, 5, and 6 of this section.)

(2) All platform planks shall be laid with the edges close together.

(3) When independent pole scaffold platforms are erected in sections, such sections shall be provided with connecting runways equipped with substantial guardrails.

(4) Guardrails, not less than 2 x 4 inches or the equivalent, approximately 42 inches high, with a midrail of 1- x 4-inch lumber or equivalent, and toeboards, shall be installed on all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section.

(r) *Interior hung scaffolds.* (1) An interior hung scaffold shall be hung or suspended from the roof structure or ceiling beams.

(2) The suspending wire or fiber rope shall be capable of supporting at least 6 times the intended load. The rope shall be wrapped at least twice around the supporting members and twice around the bearers of the scaffold, with each end of the wire rope secured by at least three standard wire-rope clips properly installed.

(3) For hanging wood scaffolds, the following minimum nominal size material shall be used:

(i) Supporting bearers 2 x 9 inches on edge;

(ii) Planking 2 x 9 inches or 2 x 10 inches, with maximum span 7 feet for

heavy duty and 10 feet for light duty or medium duty.

(4) Steel tube and coupler members may be used for hanging scaffolds with both types of scaffold designed to sustain a uniform distributed working load up to heavy duty scaffold loads with a safety factor of four.

(5) Guardrails, not less than 2 x 4 inches or the equivalent, approximately 42 inches high, with a midrail of 1- x 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides and ends on all scaffolds more than 5 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with paragraph (a)(6) of this section.

(s) *Ladder jack scaffolds.* (1) All ladder jack scaffolds shall be limited to light duty and shall not exceed a height of 20 feet above the floor or ground.

(2) All ladders used in connection with ladder jack scaffolds shall be heavy-duty ladders and shall be designed and constructed in accordance with American National Standards Institute A 14.1–1968, Safety Code for Portable Wood Ladders, and A 14.2–1968, Safety Code for Portable Metal Ladders. Cleated ladders shall not be used for this purpose.

(3) The ladder jack shall be so designed and constructed that it will bear on the side rails in addition to the ladder rungs, or if bearing on rungs only, the bearing area shall be at least 10 inches on each rung.

(4) Ladders used in conjunction with ladder jacks shall be so placed, fastened, held, or equipped with devices so as to prevent slipping.

(5) The wood platform planks shall be not less than 2 inches nominal in thickness. Both metal and wood platform planks shall overlap the bearing surface not less than 12 inches. The span between supports for wood shall not exceed 8 feet. Platform width shall be not less than 18 inches.

(6) Not more than two employees shall occupy any given 8 feet of any ladder jack scaffold at any one time.

(t) *Window jack scaffolds.* (1) Window jack scaffolds shall be used only for the purpose of working at the window opening through which the jack is placed.

(2) Window jacks shall not be used to support planks placed between one window jack and another or for other elements of scaffolding.

(3) Window jack scaffolds shall be provided with guardrails unless safety belts with lifelines are attached and provided for employee.

(4) Not more than one employee shall occupy a window jack scaffold at any one time.

(u) *Roofing brackets.* (1) Roofing brackets shall be constructed to fit the pitch of the roof.

(2) Brackets shall be secured in place by nailing in addition to the pointed metal projections. When it is impractical to nail brackets, rope supports shall be used. When rope supports are used, they shall consist of first-grade manila of at least ¾-inch diameter, or equivalent.

(3) A catch platform shall be installed below the working area of roofs more than 10 feet from the ground to eaves with a slope greater than 3 inches in 12 inches without a parapet. In width, the platform shall extend 2 feet beyond the projection of the eaves and shall be provided with a guardrail, midrail, and toeboard. This provision shall not apply where employees engaged in work upon such roofs are protected by a safety belt attached to a lifeline.

(v) *Crawling boards or chicken ladders.* (1) Crawling boards shall be not less than 10 inches wide and 1 inch thick, having cleats 1 x 1½ inches. The cleats shall be equal in length to the width of the board and spaced at equal intervals not to exceed 24 inches. Nails shall be driven through and clinched on the underside. The crawling board shall extend from the ridge pole to the eaves when used in connection with roof construction, repair, or maintenance.

(2) A firmly fastened lifeline of at least ¾-inch diameter rope, or equivalent, shall be strung beside each crawling board for a handhold.

(3) Crawling boards shall be secured to the roof by means of adequate ridge hooks or other effective means.

(w) *Float or ship scaffolds.* (1) Float or ship scaffolds shall not be used to support more than three men and a few light tools, such as those needed for riveting, bolting, and welding. They shall be constructed as designd in subparagraphs (2) through (6) of this paragraph, unless substitute designs and materials provide equivalent strength, stability, and safety.

(2) The platform shall be not less than 3 feet wide and 6 feet long, made of ¾-inch plywood, equivalent to American Plywood Association Grade B–B, Group I, Exterior, or other similar material.

(3) Under the platform, there shall be two supporting bearers made from 2- x 4-inch, or 1- x 10-inch rough, "selected lumber," or better. They shall be free of knots or other flaws and project 6 inches beyond the platform on both sides. The ends of the platform shall extend 6 inches beyond the outer edges of the bearers. Each bearer shall be securely fastened to the platform.

(4) An edging of wood not less than ¾ x 1½ inches or equivalent shall be placed around all side of the platform to prevent tools from rolling off.

(5) Supporting ropes shall be 1-inch diameter manila rope or equivalent, free from deterioration, chemical damage, flaws, or other imperfections. Rope connections shall be such that the platform cannot shift or slip. If two ropes are used with each float, they shall be arranged so as to provide four ends which are to be securely fastened to an overhead support. Each of the two supporting ropes shall be hitched around one end of bearer and pass under the platforms to the other end of the bearer where it is hitched again, leaving sufficient rope at each end for the supporting ties.

(6) Each employee shall be protected by an approved safety lifebelt and lifeline, in accordance with § 1518.104.

(x) *Form scaffolds.* (1) Form scaffolds shall be constructed of wood or other suitable materials, such as steel or aluminum members of known strength characteristics. All scaffolds shall be designed and erected with a minimum safety factor of 4, computed on the basis of the maximum intended load.

(2) All scaffold planking shall be a minimum of 2- x 9-inch nominal Scaffold Grade, as recognized by approved grading rules for the species of lumber used, or equivalent material. Maximum permissible spans shall not exceed 8 feet on centers for 2- x 9-inch nominal planking. Scaffold planks shall be either nailed or bolted to the ledgers or of such length that they overlap the ledgers at least 6 inches. Unsupported projecting ends of scaffolding planks shall be limited to a maximum overhang of 12 inches.

(3) Scaffolds shall not be loaded in excess of the working load for which they were designed.

(4) Figure-four form scaffolds: (i) Figure-four scaffolds are intended for light duty and shall not be used to support loads exceeding 25 pounds per square foot unless specifically designed for heavier loading. For minimum design criteria, see Table L–14.

TABLE L–14—MINIMUM DESIGN CRITERIA FOR FIGURE-FOUR FORM SCAFFOLDS

Members	*Dimensions*
Uprights	2 x 4 in. or 2 x 6 in.
Outriggers ledgers (two).	1 x 6 in.
Braces	1 x 6 in.
Guardrails	2 x 4 in.
Guardrail height	Approximately 42 in.
Intermediate guardrails.	1 x 4 in.
Toeboards	1 x 4 in.
Maximum length of ledgers.	3 ft. 6 in. (unsupported).
Planking	2 x 9 in.
Upright spacing	8 ft. 0 in. (on centers).

(ii) Figure-four form scaffold frames shall be spaced not more than 8 feet on centers and constructed from sound lumber, as follows: The outrigger ledger shall consist of two pieces of 1- x 6-inch or heavier material nailed on opposite sides of the vertical form support. Ledgers shall project not more than 3 feet 6 inches from the outside of the form support and shall be substantially braced and secured to prevent tipping or turning. The knee or angle brace shall intersect the ledger at least 3 feet from the form at an angle of approximately 45°, and the lower end shall be nailed to a vertical support. The platform shall consist of two or more 2- x 9-inch planks, which shall be of such length that they extend at least 6 inches beyond ledgers at each end unless secured to the ledgers. When planks are secured to the ledgers (nailed or bolted), a wood filler strip shall be used between the ledgers. Unsupported projecting ends of planks shall be limited to an overhang of 12 inches.

(5) Metal bracket form scaffolds: (i) Metal brackets or scaffold jacks which are an integral part of the form shall be securely bolted or welded to the form. Folding type brackets shall be either

bolted or secured with a locking-type pin when extended for use.

(ii) "Clip-on" or "hook-over" brackets may be used, provided the form walers are bolted to the form or secured by snap ties or shea-bolt extending through the form and securely anchored.

(iii) Metal brackets shall be spaced not more than 8 feet on centers.

(iv) Scaffold planks shall be either bolted to the metal brackets or of such length that they overlap the brackets at each end by at least 6 inches. Unsupported projecting ends of scaffold planks shall be limited to a maximum overhang of 12 inches.

(v) Metal bracket form scaffolds shall be equipped with wood guardrails, intermediate rails, toeboards, and scaffold planks meeting the minimum dimensions shown in Table L–15. (Metal may be substituted for wood, providing it affords equivalent or greater design strength.)

TABLE L–15—MINIMUM DESIGN CRITERIA FOR METAL BRACKET FORM SCAFFOLDS

Members	*Dimensions*
Uprights	2 x 4 in.
Guardrails	2 x 4 in.
Guardrail height	Approximately 42 in.
Intermediate guardrails.	1 x 4 in.
Toeboards	1 x 4 in.
Planking	2 x 9 in.

(6) Wooden bracket form scaffolds: (i) Wooden bracket form scaffolds shall be an integral part of the form panel. The minimum design criteria set forth herein and in Table L–16 cover scaffolding intended for light duty and shall not be used to support loads exceeding 25 pounds per square foot, unless specifically designed for heavier loading.

(ii) Scaffold planks shall be either nailed or bolted to the ledgers or of such length that they overlap the ledgers at each end by at least 6 inches. Unsupported projecting ends of scaffold planks shall be limited to a maximum overhang of 12 inches.

TABLE L–16—MINIMUM DESIGN CRITERIA FOR WOODEN BRACKET FORM SCAFFOLDS

Members	*Dimensions*
Uprights	2 x 4 in. or 2 x 6 in.
Support ledgers	2 x 6 in.
Maximum scaffold width.	3 ft. 6 in.
Braces	1 x 6 in.
Guardrails	2 x 4 in.
Guardrail height	Approximately 42 in.
Intermediate guardrails.	1 x 4 in.
Toeboards	1 x 4 in.
Upright spacing	8 ft. 0 in. (on centers).

(iii) Guardrails and toeboard shall be installed on all open sides and ends of platforms and scaffolding over 5 feet above floor or ground. Guardrails shall be 1- x 4-inch nominal dimension or equivalent, approximately 42 inches high, supported at intervals not to exceed 8 feet. Guardrails shall be equipped with midrails constructed of 2- x 4-inch nominal lumber or equivalent. Toeboards shall be constructed of 1- x 4-inch nominal lumber or equivalent and shall extend not less than 4 inches above the scaffold plank.

§ 1518.452 Definitions.

(a) "Ladders"—(1) "Cleats"—Ladder crosspieces of rectangular cross section placed on edge on which a person may step in ascending or descending.

(2) "Single cleat ladder"—One which consists of a pair of side rails, usually parallel, but with flared side rails permissible, connected together with cleats that are joined to the side rails at regular intervals.

(3) "Double cleat ladder"—One that is similar to a single cleat ladder, but is wider, with an additional center rail which will allow for two-way traffic for workmen in ascending and descending.

(b) "Scaffolding"—(1) "Bearer"—A horizontal member of a scaffold upon which the platform rests and which may be supported by ledgers.

(2) "Boatswain's chair"—A seat supported by slings attached to a suspended rope, designed to accommodate one workman in a sitting position.

(3) "Brace"—A tie that holds one scaffold member in a fixed position with respect to another member.

(4) "Bricklayers' square scaffold"—A scaffold composed of framed wood squares which support a platform, limited to light and medium duty.

(5) "Carpenters' bracket scaffold"—A scaffold consisting of wood or metal brackets supporting a platform.

(6) "Coupler"—A device for locking together the component parts of a tubular metal scaffold. (The material used for the couplers shall be of a structural type, such as a drop-forged steel, malleable iron, or structural grade aluminum.)

(7) "Crawling board or chicken ladder"—A plank with cleats spaced and secured at equal intervals, for use by a worker on roofs, not designed to carry any material.

(8) "Double pole or independent pole scaffold"—A scaffold supported from the base by a double row of uprights, independent of support from the walls and constructed of uprights, ledgers, horizontal platform bearers, and diagonal bracing.

(9) "Float or ship scaffold"—A scaffold hung from overhead supports by means of ropes and consisting of a substantial platform having diagonal bracing underneath, resting upon and securely fastened to two parallel plank bearers at right angles to the span.

(10) "Guardrail"—A rail secured to uprights and erected along the exposed sides and ends of platforms.

(11) "Heavy duty scaffold"—A scaffold designed and constructed to carry a working load not to exceed 75 pounds per square foot.

(12) "Horse scaffold"—A scaffold for light or medium duty, composed of horses supporting a work platform.

(13) "Interior hung scaffold"—A scaffold suspended from the ceiling or roof structure.

(14) "Ladder jack scaffold"—A light duty scaffold supported by brackets attached to ladders.

(15) "Ledgers (stringer)"—A horizontal scaffold member which extends from post to post and which supports the putlogs or bearers forming a tie between the posts.

(16) "Light duty scaffold"—A scaffold designed and constructed to carry a working load not to exceed 25 pounds per square foot.

(17) "Manually propelled mobile scaffold"—A portable rolling scaffold supported by casters.

(18) "Masons' adjustable multiple-point suspension scaffold"—A scaffold having a continuous platform supported by bearers suspended by wire rope from overhead supports, so arranged and operated as to permit the raising or lowering of the platform to desired working positions.

(19) "Maximum intended load"—The total of all loads including the working load, the weight of the scaffold, and such other loads as may be reasonably anticipated.

(20) "Medium duty scaffold"—A scaffold designed and constructed to carry a working load not to exceed 50 pounds per square foot.

(21) "Midrail"—A rail approximately midway between the guardrail and platform, secured to the uprights erected along the exposed sides and ends of platforms.

(22) "Needle beam scaffold"—A light duty scaffold consisting of needle beams supporting a platform.

(23) "Outrigger scaffold"—A scaffold supported by outriggers or thrustouts projecting beyond the wall or face of the building or structure, the inboard ends of which are secured inside of such building or structure.

(24) "Putlog"—A scaffold member upon which the platform rests.

(25) "Roofing or bearer bracket"—A bracket used in slope roof construction, having provisions for fastening to the roof or supported by ropes fastened over the ridge and secured to some suitable object.

(26) "Runner"—The lengthwise horizontal bracing or bearing members or both.

(27) "Scaffold"—Any temporary elevated platform and its supporting structure used for supporting workmen or materials, or both.

(28) "Single-point adjustable suspension scaffold"—A manually or power-operated unit designed for light duty use, supported by a single wire rope from an overhead support so arranged and operated as to permit the raising or lowering of platform to desired working positions.

(29) "Single-pole scaffold"—Platforms resting on putlogs or cross beams, the outside ends of which are supported on ledgers secured to a single row or posts or uprights, and the inner ends of which are supported on or in a wall.

(30) "Stone setters' adjustable multiple-point suspension scaffold"—A swinging type scaffold having a platform supported by hangers suspended at four points so as to permit the raising or lowering of the platform to the desired working position by the use of hoisting machines.

(31) "Toeboard"—A barrier secured along the sides and ends of a platform to guard against the falling of material.

(32) "Tube and coupler scaffold"—An assembly consisting of tubing which serves as posts, bearers, braces, ties, and runners, a base supporting the posts, and special couplers which serve to connect the uprights and to join the various members.

(33) "Tubular welded frame scaffold"—A sectional panel or frame metal scaffold substantially built up of prefabricated welded sections which consists of posts and horizontal bearer with intermediate members.

(34) "Two-point suspension scaffold (swinging scaffold)"—A scaffold, the platform of which is supported by hangers (stirrups) at two points, suspended from overhead supports so as to permit the raising or lowering of the platform to the desired working position by tackle or hoisting machines.

(35) "Window jack scaffold"—A scaffold the platform of which is supported by a bracket or jack which projects through a window opening.

(36) "Working load"—Load imposed by men, materials, and equipment.

Subpart M—Floor and Wall Openings, and Stairways

§ 1518.500 Guardrails, handrails, and covers.

(a) *General provision.* This subpart shall apply to temporary or emergency conditions as well as to permanent conditions, where there is danger of employees or materials falling through floor, roof, or wall openings, or from stairways or runways.

(b) *Guarding of floor openings and floor holes.* (1) Floor openings shall be guarded by a standard railing and toe boards or cover, as specified in paragraph (f) of this section. In general, the railing shall be provided on all exposed sides, except at entrances to stairways.

(2) Ladderway floor openings or platforms shall be guarded by standard railings with standard toe boards on all exposed sides, except at entrance to opening, with the passage through the railing either provided with a swinging gate or so offset that a person cannot walk directly into the opening.

(3) Hatchways and chute floor openings shall be guarded by one of the following:

(i) Hinged floor opening cover of standard strength and construction equipped with standard railing or permanently attached thereto so as to leave only one exposed side. When the opening is not in use, the cover shall be closed or the exposed side shall be guarded at both top and intermediate positions by removable standard railings;

(ii) A removable railing with toe board on not more than two sides of the opening and fixed standard railings with toe boards on all other exposed sides. The removable railings shall be kept in place when the opening is not in use and should preferably be hinged or otherwise mounted so as to be conveniently replaceable.

(4) Skylight openings and holes shall be guarded by a cover or a fixed standard railing on all exposed sides, whether or not covered by glass.

(5) Pits and trap-door floor openings shall be guarded by a floor opening cover of standard strength and construction. While the cover is not in place, the pit or trap openings shall be protected on all exposed sides by removable standard railings.

(6) Manhole floor openings shall be guarded by standard covers which need not be hinged in place. While the cover is not in place, the manhole opening shall be protected by standard railings.

(7) Temporary floor openings shall have standard railings.

(8) Floor holes, into which persons can accidentally walk, shall be guarded by either a standard railing with standard toe board on all exposed sides, or a floor hole cover of standard strength and construction that should be hinged in place. While the cover is not in place, the floor hole shall be protected by a standard railing.

(9) Where doors or gates open directly on a stairway, a platform shall be provided, and the swing of the door shall not reduce the effective width of the platform to less than 20 inches.

(c) *Guarding of wall openings.* (1) Wall openings, from which there is a drop of more than 4 feet, and the bottom of the opening is less than 3 feet above the working surface, shall be guarded as follows:

(i) When the height and placement of the opening in relation to the working surface is such that either a standard rail or intermediate rail will effectively reduce the danger of falling, one or both shall be provided;

(ii) The bottom of a wall opening, which is less than 4 inches above the working surface, regardless of width, shall be protected by a standard toeboard or an enclosing screen either of solid construction or as specified in paragraph (f) (7) (ii) of this section.

(2) Extension platforms outside of wall openings onto which materials can be hoisted for handling shall have side rails or equivalent guards of standard specifications.

(3) When a chute is attached to an opening, the provisions of subparagraph (1) of this paragraph shall apply, except that a toeboard is not required.

(d) *Guarding of open-sided floors, platforms, and runways.* (1) Every open-sided floor or platform 4 feet or more above adjacent floor or ground level shall be guarded by a standard railing, or the equivalent, as specified in paragraph (f) (i) of this section, on all open sides, except where there is entrance to a ramp, stairway, or fixed ladder. The railing shall be provided with a toeboard wherever, beneath the open sides, persons can pass, or there is moving machinery, or there is equipment with which falling materials could create a hazard.

(2) Runways shall be guarded by a standard railing, or the equivalent, as specified in paragraph (f) (i) of this section, on all open sides, 4 feet or more above floor or ground level. Wherever tools, machine parts, or materials are likely to be used on the runway, a toe board shall also be provided on each exposed side.

(3) Runways used exclusively for special purposes may have the railing on one side omitted where operating conditions necessitate such omission, providing the falling hazard is minimized by using a runway not less than 18 inches wide.

(4) Where employees entering upon runways become thereby exposed to machinery, electrical equipment, or other danger not a falling hazard, additional guarding shall be provided.

(5) Regardless of height, open-sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment, pickling or galvanizing tanks, degreasing units, and similar hazards, shall be guarded with a standard railing and toe board.

(e) *Stairway railings and guards.* (1) Every flight of stairs having four or more risers shall be equipped with standard stair railings or standard handrails as specified below, the width of the stair to be measured clear of all obstructions except handrails:

(i) On stairways less than 44 inches wide having both sides enclosed, at least one handrail, preferably on the right side descending;

(ii) On stairways less than 44 inches wide having one side open, at least one stair railing on the open side;

(iii) On stairways less than 44 inches wide having both sides open, one stair railing on each side;

(iv) On stairways more than 44 inches wide but less than 88 inches wide, one handrail on each enclosed side and one stair railing on each open side;

(v) On stairways 88 or more inches wide, one handrail on each enclosed side, one stair railing on each open side, and one intermediate stair railing located approximately midway of the width.

(2) Winding stairs shall be equipped with a handrail offset to prevent walking on all portions of the treads having width less than 6 inches.

(f) *Standard specifications.* (1) A standard railing shall consist of top rail, intermediate rail, and posts, and shall have a vertical height of approximately 42 inches from upper surface of top rail to floor, platform, runway, or ramp level. The top rail shall be smooth-surfaced throughout the length of the railing. The intermediate rail shall be halfway between the top rail and the floor, platform, runway, or ramp. The ends of the rails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard. Minimum requirements for standard railings under various types of construction are specified in the following paragraphs:

(i) For wood railings, the posts shall be of at least 2-inch by 4-inch stock spaced not to exceed 6 feet; the top and intermediate rails shall be of at least 2-inch by 4-inch stock. If top rail is made of two right-angle pieces of 1-inch by 4-inch stock, posts may be spaced on

8-foot centers, with 2-inch by 4-inch intermediate rail.

(ii) For pipe railings, posts and top and intermediate railings shall be at least 1½ inches nominal diameter with posts spaced not more than 8 feet on centers.

(iii) For structural steel railings, posts and top and intermediate rails shall be of 2-inch by 2-inch by ⅜-inch angles or other metal shapes of equivalent bending strength, with posts spaced not more than 8 feet on centers.

(iv) The anchoring of posts and framing of members for railings of all types shall be of such construction that the completed structure shall be capable of withstanding a load of at least 200 pounds applied in any direction at any point on the top rail, with a minimum of deflection.

(v) Railings receiving heavy stresses from employees trucking or handling materials shall be provided additional strength by the use of heavier stock, closer spacing of posts, bracing, or by other means.

(vi) Other types, sizes, and arrangements of railing construction are acceptable, provided they meet the following conditions:

(*a*) A smooth-surfaced top rail at a height above floor, platform, runway, or ramp level of approximately 42 inches;

(*b*) A strength to withstand at least the minimum requirement of 200 pounds top rail pressure with a minimum of deflection;

(*c*) Protection between top rail and floor, platform, runway, ramp, or stair treads, equivalent at least to that afforded by a standard intermediate rail;

(*d*) Elimination of overhang of rail ends unless such overhang does not constitute a hazard.

(2) A stair railing shall be of construction similar to a standard railing, but the vertical height shall be not more than 34 inches nor less than 30 inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread.

(3) (i) A standard toeboard shall be 4 inches nominal in vertical height from its top edge to the level of the floor, platform, runway, or ramp. It shall be securely fastened in place and have not more than ¼-inch clearance above floor level. It may be made of any substantial material, either solid, or with openings not over 1 inch in greatest dimension.

(ii) Where material is piled to such height that a standard toeboard does not provide protection, paneling, or screening from floor to intermediate rail or to top rail shall be provided.

(4) (i) A standard handrail shall be of construction similar to a standard railing except that it is mounted on a wall or partition, and does not include an intermediate rail. It shall have a smooth surface along the top and both sides of the handrial. The handrail shall have an adequate handhold for any one grasping it to avoid falling. Ends of the handrail shall be constructed so as not to constitute a projection hazard.

(ii) The height of handrails shall be not more than 34 inches nor less than 30 inches from upper surface of handrail to surface of tread, in line with face of riser or to surface of ramp.

(iii) All handrails and railings shall be provided with a clearance of approximately 3 inches between the handrail or railing and any other object.

(5) Floor opening covers shall be of any material that meets the following strength requirements:

(i) Conduits, trenches, and manhole covers and their supports, when located in roadways, and vehicular aisles, shall be designed to carry a truck rear-axle load of at least 2 times the maximum intended load;

(ii) The floor opening cover shall be capable of supporting the maximum intended load and so installed as to prevent accidental displacement.

(6) Skylight openings that create a falling hazard shall be guarded with a standard railing, or covered in accordance with subparagraph (5) (ii) of this paragraph.

(7) Wall opening protection shall meet the following requirements:

(i) Barriers shall be of such construction and mounting that, when in place at the opening, the barrier is capable of withstanding a load of at least 200 pounds applied in any direction (except upward), with a minimum of deflection at any point on the top rail or corresponding member.

(ii) Screens shall be of such construction and mounting that they are capable of withstanding a load of at least 200 pounds applied horizontally at any point on the near side of the screen. They may be of solid construction, of grill work with openings not more than 8 inches long, or of slat work with openings not more than 4 inches wide with length unrestricted.

§ 1518.501 Stairways.

(a) On all structures, two or more floors (20 feet or over) in height, stairways (or ramps) shall be provided for employees during the construction period. Where permanent stairways are not constructed or installed concurrently with the construction of each floor, a temporary stairway shall be provided.

(b) Stairway railings and guardrails shall meet the requirements of § 1518.500 (e) and (f).

(c) All parts of stairways shall be free of hazardous projections, such as protruding nails.

(d) Debris, and other loose materials, shall not be allowed on or under stairways.

(e) Slippery conditions on stairways shall be eliminated as soon as possible after they occur.

(f) Permanent steel or other metal stairways, and landings with hollow pan-type treads that are to be filled with concrete or other materials, when used during construction, shall be filled to the level of the nosing with solid material. The requirement shall not apply during the period of actual construction of the stairways themselves.

(g) Wooden treads for temporary service shall be full width.

(h) Metal landings shall be secured in place before filling.

(i) Temporary stairs shall have a landing not less than 30 inches in the direction of travel at every 12 feet of vertical rise.

(j) Stairs shall be installed at angles to the horizontal of between 30° and 50°.

(k) Rise height and tread width shall be uniform throughout any flight of stairs including any foundation structure used as one or more treads of the stairs.

(l) All stairs shall be lighted in accordance with Subpart D of this part.

(m) Spiral stairways shall not be permitted except for special limited usage and secondary access situations where it is not practical to provide a conventional stairway.

§ 1518.502 Definitions.

(a) "Floor hole"—An opening measuring less than 12 inches but more than 1 inch in its least dimension in any floor, roof, platform, pavement, or yard through which materials but not persons may fall, such as a belt hold, pipe opening, or slot opening.

(b) "Floor opening"—An opening measuring 12 inches or more in its least dimension in any floor, roof, platform, pavement, or yard through which persons may fall, such as a hatchway, stair or ladder opening, pit, or manhole.

(c) "Handrail"—A bar or pipe supported on brackets from a wall or partition, as on a stairway or ramp, to furnish persons with a handhold in case of tripping.

(d) "Nose, nosing"—That portion of a tread projecting beyond the face of the riser immediately below.

(e) "Platform"—A working space for persons, elevated above the surrounding floor or ground, such as a balcony or platform for the operation of machinery and equipment.

(f) "Runway"—A passageway for persons, elevated above the surrounding floor or ground level, such as a footwalk along shafting or a walkway between buildings.

(g) "Rise"—The vertical distance from the top of a tread to the top of the next higher tread.

(h) "Stair platform"—An extended step or landing breaking a continuous run of stairs.

(i) "Stair railing"—A vertical barrier erected along exposed sides of a stairway to prevent falls of persons.

(j) "Stairs, stairways"—A series of steps leading from one level or floor to another, or leading to platforms, pits, boiler rooms, crossovers, or around machinery, tanks, and other equipment that are used more or less continuously or routinely by employees or only occasionally by specific individuals. For the purpose of this subpart, a series of steps and landings having three or more rises constitutes stairs or stairway.

(k) "Standard railing"—A vertical barrier erected along exposed edges of a floor opening, wall opening, ramp, platform, or runway to prevent falls of persons.

(l) "Standard strength and construction"—Any construction of railings, covers, or other guards that meets the requirements of this subpart.

(m) "Toe board"—A vertical barrier at floor level erected along exposed edges of a floor opening, wall opening, platform, runway, or ramp to prevent falls of materials.

(n) "Tread width"—The horizontal distance from front to back of tread, including nosing, when used.

Subpart N—Cranes, Derricks, Hoists, Elevators, and Conveyors

§ 1518.550 Cranes and derricks.

(a) *General requirements.* (1) The employer shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes and derricks. Where manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determinations of a professional engineer competent in this field. Attachments used with cranes shall not exceed the capacity, rating, or scope recommended by the manufacturer.

(2) Rated load capacities, and recommended operating speeds, special hazard warnings, or instruction, shall be conspicuously posted on all equipment. Instructions or warnings shall be visible to the operator while he is at his control station.

(3) A boom angle indicator and a load indicating device in good working order shall be provided.

(4) Hand signals to crane and derrick operators shall be those prescribed by the applicable ANSI standard for the type of crane in use. An illustration of the signals shall be posted at the job site.

(5) The employer shall designate a competent person who shall inspect all machinery and equipment prior to each use, and during use to make sure it is in safe operating condition. Any deficiencies shall be repaired, or defective parts replaced, before continued use.

(6) A thorough, annual inspection of the hoisting machinery shall be made by a competent person. The employer shall maintain a record of the dates and results of inspections for each hoisting machine and piece of equipment.

(7) Wire rope shall be taken out of service when any of the following conditions exist:

(i) In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay;

(ii) Wear of one-third the original diameter of outside individual wires. Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure;

(iii) Evidence of any heat damage from any cause;

(iv) Reductions from nominal diameter of more than three-sixty-fourths inch for diameters to and including three-fourths inch, one-sixteenth inch for diameter seven-eighths inch to 1⅛ inches inclusive, three-thirty-seconds inch for diameters 1¼ to 1½ inches inclusive;

(v) In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.

(8) Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or other moving parts or equipment shall be guarded if such parts are exposed to contact by employees, or otherwise create a hazard. Guarding shall meet the requirements of the American National Standards Institute B 15.1–1953, Safety Code for Mechanical Power Transmission Apparatus.

(9) Accessible areas within the swing radius of the outermost part of the body of a revolving derrick or crane, either permanently or temporarily mounted, shall be guarded in such a manner as to prevent an employee from being struck or crushed by the crane.

(10) All exhaust pipes shall be guarded or insulated in areas where contact by employees is possible in the performance of normal duties.

(11) Whenever internal combustion engine powered equipment exhausts in enclosed spaces, tests shall be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres.

(12) All windows in cabs shall be of safety glass, or equivalent, that introduces no visible distortion.

(13) (i) Where necessary for rigging or service requirements, a ladder, or steps, shall be provided to give access to a cab roof.

(ii) On cranes, handholds and steps shall be provided for easy access to the car and cab.

(iii) Outside platforms shall be provided with guardrails.

(14) Fuel tank filler pipe shall be located in such a position, or protected in such manner, as to not allow spill or overflow to run onto the engine, exhaust, or electrical equipment of any machine being fueled.

(i) An accessible fire extinguisher of 5BC rating, or higher, shall be available at all operator stations or cabs of equipment.

(ii) All fuels shall be transported, stored, and handled to meet the requirements of Subpart F of this part.

(15) Except where electrical distribution and transmission lines have been deenergized and visibly grounded at point of work or where insulating barriers, not a part of or an attachment to the equipment or machinery, have been erected to prevent physical contact with the lines, equipment or machines shall be operated proximate to power lines only in accordance with the following:

(i) For lines rated 50 kV. or below, minimum clearance between the lines and any part of the crane or load shall be 10 feet;

(ii) For lines rated over 50 kV., minimum clearance between the lines and any part of the crane or load shall be 10 feet plus 0.4 inch for each 1 kV. over 50 kV., or use twice the length of the line insulator but never less than 10 feet;

(iii) In transit with no load and boom lowered, the equipment clearance shall be a minimum of 4 feet;

(iv) A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means;

(v) Cage-type boom guards, insulating links, or proximity warning devices may be used on cranes, but the use of such devices shall not alter the requirements of any other regulation of this part even if such device is required by law or regulation;

(vi) Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded;

(vii) Prior to work near transmitter towers where charges can be induced in the equipment or materials being handled, the transmitter shall be deenergized or tests shall be made to determine if voltages are induced on the crane. The following precautions shall be taken when necessary to dissipate induced voltages:

(*a*) The equipment shall be provided with an electrical ground directly to the upper rotating structure supporting the boom; and

(*b*) Ground jumper cables shall be attached to materials being handled by tall-boom cranes when current is induced while working near energized transmitters. Crews shall be provided with nonconductive poles having large alligator clips or other similar protection to attach the ground cable to the load.

(*c*) Combustible and flammable materials shall be removed from the immediate area prior to operations.

(b) *Crawler, locomotive and truck cranes.* (1) The boom hoisting mechanism shall meet the following requirements:

(i) It shall be provided with a suitable clutching or power engaging device permitting immediate starting or stopping of the boom drum motion.

(ii) The boom hoisting mechanism also shall be provided with a self-setting safety brake, capable of supporting all rated loads, with recommended reeving.

(iii) The boom hoisting mechanism shall be provided with an auxiliary ratchet and pawl or other positive locking device.

(2) When power-operated load hoist brakes having no continuous mechanical linkage between the actuating and braking means are used for controlling loads, an automatic means shall be provided to prevent the load from falling in event of loss of break actuating power.

(i) Brake pedals shall be constructed so the operator's feet will not easily slip off, and shall be equipped with a means for latching in the applied position.

(3) All cranes with wire rope-supported main booms shall be equipped with energy absorbing boomstops.

(4) Jibs shall have positive stops to prevent their movement of more than 5 degrees beyond the straight line of the jib and boom on conventional type crane booms. Cable type belly slings are not in compliance with this requirement.

(5) Automatic means shall be provided to stop boom drum motion when the maximum permissible boom angle is reached.

(6) All crawler, truck, or locomotive cranes in use shall meet the applicable requirements for design, inspection, construction, testing, maintenance and operation as prescribed in the ANSI B30.5–1968, Safety Code for Crawler, Locomotive and Truck Cranes.

(c) *Hammerhead tower cranes.* (1) Adequate clearance shall be maintained between moving and rotating structures of the crane and fixed objects to allow the passage of employees without harm.

(2) Employees required to perform duties on the horizontal boom of hammerhead tower cranes shall be protected against falling by guardrails or by safety belts and lanyards attached to lifelines in conformance with Subpart E of this part.

(3) Buffers shall be provided at both ends of travel of the trolley.

(4) Cranes mounted on rail tracks shall be equipped with limit switches limiting the travel of the crane on the track and stops or buffers at each end of the tracks.

(5) All hammerhead tower cranes in use shall meet the applicable requirements for design, construction, installation, testing, maintenance, inspection, and operation as prescribed in the ANSI B30.3–1971, Safety Code for Hammerhead Tower Cranes.

(d) *Overhead and gantry cranes.* (1) The rated load of the crane shall be plainly marked on each side of the crane, and if the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load block, and this marking shall be clearly legible from the ground or floor.

(2) Bridge trucks shall be equipped with sweeps which extend below the top of the rail and project in front of the truck wheels.

(3) Except for floor-operated cranes, a gong or other effective audible warning signal shall be provided for each crane equipped with a power traveling mechanism.

(4) All overhead and gantry cranes in use shall meet the applicable requirements for design, construction, installation, testing, maintenance, inspection, and operation as prescribed in the ANSI B30.2.0–1967, Safety Code for Overhead and Gantry Cranes.

(e) *Derricks.* All derricks in use shall meet the applicable requirements for design, construction, installation, inspection, testing, maintenance, and operation as prescribed in American National Standards Institute B30.6–1967, Safety Code for Derricks.

(f) *Mobile cranes mounted on barges.* (1) When a mobile crane is mounted on a barge, the rated load of the crane shall not exceed the original capacity specified by the manufacturer.

(2) The combination of operating radius and load handled shall not produce a list in excess of 5°.

(3) A load rating chart, with clearly legible letters and figures, shall be provided with each crane, and securely fixed at a location easily visible to the operator.

(4) When load ratings are reduced to stay within the limits for list of the barge with a crane mounted on it, a new load rating chart shall be provided.

(5) Mobile cranes on barges shall be blocked to prevent shifting.

(g) *Permanently mounted cranes and derricks.* (1) When nonmobile cranes and derricks are installed on a barge, the capacity shall be specified by a professional engineer competent in the field.

(2) The combination of operating radius and load handled shall not produce a list in excess of 5° for cranes rated at 25 tons or less, and 7° for cranes rated over 25 tons.

(3) For derricks, the combination of operating radius and load handled shall not produce a list in excess of 10°.

(4) A load rating chart with clearly legible letters and figures shall be provided and securely fixed at a location easily visible to the operator.

(5) Floating cranes and floating dirricks in use shall meet the applicable requirements for design, construction, installation, testing, maintenance, and operation as prescribed in the ANSI B30.8–1970, Safety Code for Floating Cranes and Floating Derricks.

(h) *Protection of employees working on barges.* The employer shall comply with the applicable requirements for protection of employees working on board marine vessels specified in § 1518.605.

§ 1518.551 Helicopters.

(a) Helicopter cranes when used shall be certified and conform to all applicable regulations of the FAA, 14 CFR Part 133.

(b) Rotorcraft pilots shall be licensed to conduct external-load operations in accordance with the FAA regulations, 14 CFR Part 133.

§ 1518.552 Material hoists and personnel elevators.

(a) *General requirements.* (1) The employer shall comply with the manufacturer's specifications and limitations applicable to the operation of all hoists and elevators. Where manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determinations of a professional engineer competent in the field.

(2) Rated load capacities, recommended operating speeds, and special hazard warnings or instructions shall be posted on cars and platforms.

(3) Wire rope shall be removed from service when any of the following conditions exists:

(i) In hoisting ropes, six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay;

(ii) Abrasion, scrubbing, flattening, or peening, causing loss of more than one-third of the original diameter of the outside wires;

(iii) Evidence of any heat damage resulting from a torch or any damage caused by contact with electrical wires;

(iv) Reduction from nominal diameter of more than three sixty-fourths inch for diameters up to and including three-fourths inch; one-sixteenth inch for diameters seven-eighths to 1⅛ inches; and three thirty-seconds inch for diameters 1¼ to 1½ inches.

(4) Hoisting ropes shall be installed in accordance with the wire rope manufacturer's recommendations.

(5) The installation of live booms on hoists is prohibited.

(b) *Material hoists.* (1) Operating rules shall be established and posted at the operator's station of the hoist. Such rules shall include signal system and allowable line speed for various loads.

(2) All entrances of the hoistways shall be protected by substantial gates or bars which shall guard the full width of the landing entrance. All hoistway entrance bars and gates shall be painted with diagonal contrasting colors, such as black and yellow stripes.

(i) Bars shall be not less than 2- by 4-inch wooden bars or the equivalent, located 2 feet from the hoistway line. Bars shall be located not less than 36 inches nor more than 42 inches above the floor.

(ii) Gates or bars protecting the entrances to hoistway shall be equipped with a latching device.

(3) Overhead protective covering of 2-inch planking, ¾-inch plywood, or other solid material of equivalent strength, shall be provided on the top of every material hoist cage or platform.

(4) The operator's station of a hoisting machine shall be provided with overhead protection equivalent to tight planking not less than 2 inches thick. The support for the overhead protection shall be of equal strength.

(5) Hoist towers may be used with or without an enclosure on all sides. However, whichever alternative is chosen, the following applicable conditions shall be met:

(i) When a hoist tower is enclosed, it shall be enclosed on all sides for its entire height with a screen enclosure of ½-inch mesh, No. 18 U.S. gauge wire or equivalent, except for landing access.

(ii) When a hoist tower is not enclosed, the hoist platform or car shall be totally enclosed (caged) on all sides for the full height between the floor and the overhead protective covering with ½-inch mesh of No. 14 U.S. gauge wire or equivalent. The hoist platform enclosure shall include the required gates for loading and unloading.

(6) Car arresting devices shall be installed to function in case of rope failure.

(7) All material hoist towers shall be designed by a licensed professional engineer.

(8) All material hoists shall conform to the requirements of ANSI A10.5–1969,

Safety Requirements for Material Hoists.

(c) *Personnel elevators.* (1) Elevator towers outside the structure shall be enclosed for the full height on the side or sides used for entrance and exit to the structure. At the lowest landing, the enclosure on the sides not used for exit or entrance to the structure shall be enclosed to a height of at least 10 feet. Other sides of the tower adjacent to floors or scaffold platforms shall be enclosed to a height of 10 feet above the level of such floors or scaffolds.

(2) Towers inside of structures shall be enclosed on all four sides throughout the full height.

(3) Towers shall be anchored to the structure at intervals not exceeding 25 feet. In addition to tie-ins, a series of guys shall be installed. Where tie-ins are not practical the tower shall be anchored by means of guys made of wire rope at least one-half inch in diameter, securely fastened to anchorages to ensure stability.

(4) Hoistway doors or gates shall be not less than 6 feet 6 inches high and shall be provided with mechanical locks which cannot be operated from the landing side, and shall be accessible only to persons on the car.

(5) Cars shall be permanently enclosed on all sides and the top, except sides used for entrance and exit, which have car gates or doors.

(6) A door or gate shall be provided at each entrance to the car which shall protect the full width and height of the car entrance opening.

(7) Overhead protective covering of 2-inch planking, ¾-inch plywood or other solid material of equivalent strength shall be provided on the top of every personnel hoist.

(8) Doors or gates shall be provided with electric contacts which do not allow movement of the hoist when door or gate is open.

(9) Safeties shall be capable of stopping and holding the car and rated load when traveling at governor tripping speed.

(10) Cars shall be provided with a capacity and data plate secured in a conspicuous place on the car or crosshead.

(11) Internal combustion engines shall not be permitted for direct drive.

(12) Normal and final terminal stopping devices shall be provided.

(13) An emergency stop switch shall be provided in the car and marked "Stop."

(14) Ropes: (i) The minimum number of hoisting ropes used shall be three for traction hoists and two for drum-type hoists.

(ii) The minimum diameter of hoisting and counterweight wire ropes shall be ½-inch.

(iii) Safety factors:

MINIMUM FACTORS OF SAFETY FOR SUSPENSION WIRE ROPES

Rope speed in feet per minute:	*Minimum factor of safety*
50	7.60
75	7.75
100	7.95
125	8.10
150	8.25
175	8.40
200	8.60
225	8.75
250	8.90
300	9.20
350	9.50
400	9.75
450	10.00
500	10.25
550	10.45
600	10.70

(15) Following assembly and erection of hoists, and before being put in service, an inspection and test of all functions and safety devices shall be made under the supervision of a competent person. A similar inspection and test is required following major alteration of an existing installation. All hoists shall be inspected and tested at not more than 3-month intervals. Records shall be maintained and kept on file for the duration of the job.

(16) All personnel elevators used by employees shall be constructed of materials and components which meet the specifications for materials, construction, safety devices, assembly, and structural integrity as stated in the American National Standard A10.4–1971, Safety Requirements for Personnel Hoists.

§ 1518.553 Base-mounted drum hoists.

(a) Exposed moving parts such as gears, projecting screws, setscrews, chain, cables, chain sprockets, and reciprocating or rotating parts, which might constitute a hazard, shall be guarded.

(b) All controls used during the normal operation cycle shall be located within easy reach of the operator's station.

(c) Electric motor operated hoists shall be provided with:

(i) A device to disconnect all motors from the line upon power failure and not permit any motor to be restarted until the controller handle is brought to the "off" position;

(ii) Where applicable, an overspeed preventive device;

(iii) A means whereby remote operated hoists stop when any control is ineffective.

(d) All base-mounted drum hoists in use shall meet the applicable requirements for design, construction, installation, testing, inspection, maintenance, and operation, as prescribed in the ANSI B30.7–1971, Safety Code for Base Mounted Drum Hoists.

§ 1518.554 Overhead hoists.

(a) The safe working load of the overhead hoist, as determined by the manufacturer, shall be indicated on the hoist, and this safe working load shall not be exceeded.

(b) The supporting structure to which the hoist is attached shall have a safe working load equal to that of the hoist.

(c) The support shall be arranged so as to provide for free movement of the hoist and shall not restrict the hoist from lining itself up with the load.

(d) The hoist shall be installed only in locations that will permit the operator to stand clear of the load at all times.

(e) Air hoists shall be connected to an air supply of sufficient capacity and pressure to safely operate the hoist. All air hoses supplying air shall be positively connected to prevent their becoming disconnected during use.

(f) All overhead hoists in use shall meet the applicable requirements for construction, design, installation, testing, inspection, maintenance, and operation, as prescribed in the ANSI B30.16–1969, Safety Code for Overhead Hoists.

§ 1518.555 Conveyors.

(a) Means for stopping the motor or engine shall be provided at the operator's station. Conveyor systems shall be equipped with an audible warning signal to be sounded immediately before starting up the conveyor.

(b) If the operator's station is at a remote point, similar provisions for stopping the motor or engine shall be provided at the motor or engine location.

(c) Emergency stop switches shall be arranged so that the conveyor cannot be started again until the actuating stop switch has been reset to running or "On" position.

(d) Screw conveyors shall be guarded to prevent employee contact with turning flights.

(e) Where a conveyor passes over work areas, aisles, or thoroughfares, suitable guards shall be provided to protect employees required to work below the conveyors.

(f) All crossovers, aisles, and passageways shall be conspicuously marked by suitable signs, as required by Subpart G of this part.

(g) All conveyors in use shall meet the applicable requirements for design, construction, inspection, testing, maintenance, and operation, as prescribed in the ANSI B20.1–1957, Safety Code for Conveyors, Cableways, and Related Equipment.

Subpart O—Motor Vehicles, Mechanized Equipment, and Marine Operations

§ 1518.600 Equipment.

(a) *General requirements.* (1) All equipment left unattended at night, adjacent to a highway in normal use, or adjacent to construction areas where work is in progress, shall have red lights or red reflectors to identify location of the equipment.

(2) A safety tire rack, cage, or equivalent protection shall be provided and

used when inflating tires installed on rims equipped with locking rings or similar devices.

(3) Heavy machinery, equipment, or parts thereof, which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent falling or shifting before men are permitted to work under or between them. Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or adequately blocked when being repaired or when not in use.

(4) The use, care and charging of all batteries shall conform to the requirements of Subpart K of this part.

(5) All equipment covered by this Subpart shall comply with the requirements of § 1518.550(a)(15) when working or being moved in the vicinity of power lines or energized transmitters.

(b) *Specific requirements.* [Reserved]

§ 1518.601 Motor vehicles.

(a) *General requirements.* (1) All vehicles shall be equipped with service brakes and independently operated parking brakes. Vehicle brakes shall be inspected and tested daily. Those found to be faulty shall be repaired before vehicle returns to service.

(2) All vehicles, or combination of vehicles, operating on roadways shall be equipped with two headlights (one on each side of the front end), one red taillight, and one red or amber stop light (on the rear end), in operable condition, which shall be lighted whenever visibility conditions warrant their use.

(3) All vehicles shall be equipped with an adequate audible warning device in operating condition.

(4) All motor vehicle type equipment, except light service trucks, such as pickups, which have unobstructed vision through the rear window of the cab, shall be equipped with a reverse signal alarm to meet the requirements of Society of Automotive Engineers J994–1967, Criteria for Backup Alarm Devices.

(5) All vehicles shall be equipped with windshields and automatic wipers. Cracked and broken glass shall be replaced. All vehicles having cabs shall be equipped with operable defrosting and defogging devices.

(6) All haulage vehicles, whose pay load is loaded by means of cranes, power shovels, loaders, or similar equipment, shall have a cab shield and/or canopy adequate to protect the operator from shifting or falling materials.

(7) Tools and material shall be secured to prevent movement when transported in the same compartment with employees.

(8) Vehicles used to transport employees shall have seats firmly secured and adequate for the number of employees to be carried.

(9) Seat belts and anchorages meeting Society of Automotive Engineers J4c–1965, Motor Vehicle Seat Belt Assemblies, J787b–1966, Motor Vehicle Seat Belt Anchorage and J800b–1965, Motor Vehicle Seat Belt Assembly Installations, shall be installed on all motor vehicle type equipment. There shall be a seat belt provided for each permanent seating position.

(10) Trucks with dump bodies shall be equipped with hinged supports, permanently attached, and capable of being locked in position to prevent accidental lowering of the body while maintenance or inspection work is being done beneath.

(11) Operating levers, controlling hoisting or dumping devices on haulage bodies, shall be equipped with a latch or other device which will prevent accidental starting or tripping of the mechanism.

(12) Trip handles for tailgates of dump trucks shall be so arranged that, in dumping, the operator will be in the clear.

(13) All pneumatic-tired motor vehicle equipment shall be equipped with fenders.

(14) All vehicles in use shall be inspected daily to ensure that they are in safe operating condition. Any defects shall be corrected before the vehicle is returned to service.

(b) *Specific requirements.* [Reserved]

§ 1518.602 Material handling equipment.

(a) *Earthmoving equipment.* Vehicles considered to be earthmoving equipment are: scrapers, loaders, tractors, bulldozers, compactors, graders, and other similar equipment.

(1) Seat belts shall be provided on all equipment covered by this section and shall meet the requirements of the Society of Automotive Engineers, J386–1969, Seat Belts for Construction Equipment.

(2) All earthmoving equipment shall have a service braking system capable of stopping and holding the equipment fully loaded on any grade. Roadway grades shall be designed by a professional engineer, competent in this field, and constructed to accommodate all the equipment using the roadway. Emergency access ramps and berms shall be constructed and used for runaway vehicles.

(3) Brake systems for self-propelled pneumatic-tired scrapers shall be in accordance with the Society of Automotive Engineers, J319–1969, Off-Highway Rubber-Tired Self-Propelled Scrapers.

(4) All pneumatic-tired earthmoving haulage equipment, such as scrapers, loaders, bulldozers, etc., shall be equipped with fenders on all wheels to meet the requirements of the Society of Automotive Engineers, J321–1967, Fenders for Pneumatic-Tired Earthmoving Haulage Equipment.

(5) All earthmoving equipment, whether mounted on crawlers or wheels, shall be equipped with rollover protective structure in conformance with the Society of Automotive Engineers minimum performance criteria as follows:

Equipment	*Rollover protective system*
Motor scrapers	SAE J320a (1969).
Graders	SAE J396 (1969).
Crawler loaders	SAE J395 (1969).
Crawler tractors	SAE J395 (1969).
Rubber-tired loaders	SAE J392 (1969).
Rubber-tired bulldozers.	SAE J394 (1969).

(6) All earthmoving equipment shall be equipped with a reverse signal alarm to meet the requirements of Society of Automotive Engineers J994–1967, Criteria for Backup Alarm Device. The use of reverse signal alarms shall be in addition to a signalman, if assigned.

(7) Scissor points on all front-end loaders, which constitute a hazard to the operator, shall be guarded.

(b) *Excavating equipment.* (1) Seat belts shall be provided on tractor type backhoes for traveling, and shall meet the requirements of Society of Automotive Engineers J386–1969, Seat Belts for Contruction Equipment.

(2) Tractor type backhoes shall be equipped with roll-over protective structures to meet the applicable requirements of Society of Automotive Engineers standard as specified in paragraph (a)(5) of this section.

(3) All equipment and attachments used shall meet the applicable requirements of the Power Crane and Shovel Association Standards No. 1 and No. 2–1968 and No. 3–1969, or Society of Automotive Engineers 1970 Handbook descriptions of utility attachments.

(c) *Lifting and hauling equipment (other than equipment covered under Subpart N of this part).* (1) Industrial trucks shall meet the requirements of § 1518.600 and the following:

(i) Lift trucks, stackers, etc., shall have the rated capacity, with and without removable counterweights, clearly posted on the vehicle in such a manner so as to be clearly visible to the operator. These ratings shall not be exceeded.

(ii) No modifications or additions which affect the capacity and safe operation of the equipment shall be made by the employer without the manufacturer's written approval. If such modifications or changes are made, the capacity, operation and maintenance instruction plates, tags, or decals, shall be changed accordingly. In no case shall the original safety factor of the equipment be reduced.

(iii) If loads are lifted by two or more trucks working in unison, the total weight shall not exceed the combined safe lifting capacity of all the trucks.

(iv) Steering or spinner knobs shall not be attached to the steering wheel unless the steering mechanism is of a type that prevents road reactions from causing the steering handwheel to spin. The steering knob shall be mounted within the periphery of the wheel.

(v) All industrial trucks shall be equipped with overhead guards securely attached to the machines. The guards shall be of such design and construction as to protect the operator from falling packages, boxes, bagged material, etc.

(vi) All industrial trucks shall meet the applicable requirements for design, construction, and stability of American National Standards Institute B56.1–1969, Safety Standards for Powered Industrial Trucks.

§ 1518.603 Pile driving equipment.

(a) *General requirements.* (1) Boilers and piping systems which are a part of, or used with, pile driving equipment shall meet the applicable requirements of the

American Society of Mechanical Engineers, Powers Boilers (section I).

(2) All pressure vessels which are a part of, or used with, pile driving equipment shall meet the applicable requirements of the American Society of Mechanical Engineers, Pressure Vessels (section XIII).

(3) Overhead protection, which will not obscure the vision of the operator, shall be provided. Protection shall be the equivalent of 2-inch planking or other solid material of equivalent strength.

(4) Stop blocks shall be provided for the leads to prevent the hammer from being raised against the head block.

(5) A blocking device, capable of safely supporting the weight of the hammer, shall be provided for placement in the leads under the hammer at all times while employees are working under the hammer.

(6) Guards shall be provided across the top of the head block to prevent the cable from jumping out of the sheaves.

(7) When the leads must be inclined in the driving of batter piles, provisions shall be made to stabilize the leads.

(8) Fixed leads shall be provided with a guardrailed loft platform, ladder, and adequate rings so that the loft man may snap his safety-belt line lanyard to the leads.

(9) Steam hose leading to a steam hammer or jet pipe shall be securely attached to the hammer with an adequate length of at least ¼-inch diameter chain or cable to prevent whipping in the event the joint at the hammer is broken. Air hammer hoses shall be provided with the same protection as required for steam lines.

(10) Safety chains, or equivalent means, shall be provided for each hose connection to prevent the line from thrashing around in case the coupling becomes disconnected.

(11) Steam line controls shall consist of two shutoff valves, one of which shall be a quick-acting lever type within easy reach of the hammer operator.

(12) Guys, outriggers, thrustouts, or counterbalances shall be provided as necessary to maintain stability of pile driver rigs.

(b) *Pile driving from barges and floats.* (1) Barges or floats supporting pile driving operations shall meet the applicable requirements of § 1518.605.

§ 1518.604 Site clearing.

(a) *General requirements.* (1) Employees engaged in site clearing shall be protected from hazards of irritant and toxic plants.

(2) All equipment used in site clearing operations shall be equipped with rollover guards meeting the requirements of this subpart and the applicable provisions of other sections of this part. In addition, rider-operated equipment shall be equipped with an overhead and rear canopy guard meeting the following requirements:

(i) The overhead covering on this canopy structure shall be of not less than ⅛-inch steel plate or ¼-inch woven wire mesh with openings no greater than 1 inch.

(ii) The opening in the rear of the canopy structure shall be covered with not less than ¼-inch woven wire mesh with openings no greater than 1 inch.

(b) *Specific requirements.* [Reserved]

§ 1518.605 Marine operations and equipment.

(a) *Longshoring operations.* (1) Opations fitting the definition of "longshoring operations" shall be performed in conformance with applicable requirements of 29 CFR Part 1504, "Safety and Health Regulations for Longshoring." The term "longshoring operations" mean the loading, unloading, moving, or handling of construction materials, gear and supplies, etc. into, in, on, or out of any vessel from a fixed structure or shore-to-vessel, vessel-to-shore or fixed structure or vessel-to-vessel.

(b) *Access to barges.* (1) Ramps for access of vehicles to or between barges shall be of adequate strength, provided with side boards, well maintained, and properly secured.

(2) Unless employees can step safely to or from the wharf, float, barge, or river towboat, either a ramp, meeting the requirements of subparagraph (1) of this paragraph, or a safe walkway, shall be provided.

(3) Jacob's ladders shall be of the double rung or flat tread type. They shall be well maintained and properly secured.

(4) A Jacob's ladder shall either hang without slack from its lashings or be pulled up entirely.

(5) When the upper end of the means of access rests on or is flush with the top of the bulwark, substantial steps, properly secured and equipped with at least one substantial hand rail approximately 33 inches in height, shall be provided between the top of the bulwark and the deck.

(6) Obstructions shall not be laid on or across the gangway.

(7) The means of access shall be adequately illuminated for its full length.

(8) Unless the construction makes it impossible, the means of access shall be so located that drafts of cargo do not pass over employees.

(c) *Working surfaces of barges.* (1) Employees shall not be permitted to walk along the sides of covered lighters or barges with coamings more than 5 feet high, unless there is a 3-foot clear walkway, or a grab rail, or a taut handline is provided.

(2) Decks and other working surfaces shall be maintained in a safe condition.

(3) Employees shall not be permitted to pass fore and aft, over, or around deckloads, unless there is a safe passage.

(4) Employees shall not be permitted to walk over deckloads from rail to coaming unless there is a safe passage. If it is necessary to stand at the outboard or inboard edge of the deckload where less than 24 inches of bulwark, rail, coaming, or other protection exists, all employees shall be provided with a suitable means of protection against falling from the deckload.

(d) *First-aid and lifesaving equipment.* (1) Provisions for rendering first aid and medical assistance shall be in accordance with Subpart D of this part.

(2) The employer shall ensure that there is in the vicinity of each barge in use at least one U.S. Coast Guard-approved 30-inch lifering with not less than 90 feet of line attached, and at least one portable or permanent ladder which will reach the top of the apron to the surface of the water. If the above equipment is not available at the pier, the employer shall furnish it during the time that he is working the barge.

(3) Employees walking or working on the unguarded decks of barges shall be protected with U.S. Coast Guard-approved work vests or buoyant vests.

(e) *Diving operations.* (1) The employer shall ensure that applicable requirements of "U.S. Navy Diving Manual," NAVSHIPS 0994-001-9010, Parts 1, 2, and 3 and Appendix A, B, C, D, and E are followed.

Subpart P—Excavations, Trenching, and Shoring

§ 1518.650 General requirements.

(a) The employer shall ensure that the walls and faces of all excavations which expose employees to danger from moving ground shall be guarded by a shoring system or sloping of the ground.

(b) Prior to excavation, the site shall be inspected to determine conditions requiring special precautionary safety measures. The location of underground utilities, such as electrical conduit, telephone conduit, gas, water, and sewer mains, shall be determined and plainly staked. Arrangements shall be made with the utility company or owner covering interruption of service, removal, or relocation.

(c) When employees are working around exposed underground utilities, the employees shall be protected.

(d) Trees, boulders, and other hazards in, on, or in the vicinity of excavation work, shall be removed and the area made safe.

(e) Excavated and other materials shall be so located as to prevent them from falling into the excavation or trench where men are working.

(1) All materials shall be stored and retained 4 feet or more from the edge of any excavation or trench which is more than 5 feet in depth to prevent excessive loading on the face of the excavation or trench.

(2) When the excavation or trench is 5 feet or less in depth, all materials shall be stored and retained at least 2 feet from the edge.

(f) When mobile equipment is utilized or allowed adjacent to excavations or trenches, stop logs of at least 8 inches by 8 inches, or other preventive measures, shall be used to prevent the equipment from running into the trench or excavation.

(g) Where ramps are used in excavations, a minimum width of 4 feet for employee ramps, or a 12-foot minimum when used by both employees and equipment, shall be provided. Guardrails shall

be provided on all personnel ramps. Barrier guards not less than 8- x 8-inch timbers, or equivalent protection, shall be provided to separate employee and equipment traffic on ramp.

(h) Where employees will be working in or adjacent to excavations and trenches, the area shall be inspected by a properly qualified person daily and after every rainstorm or other occurrence which may increase the hazard of slides and cave-ins. The shoring shall be increased, if necessary, or the slope scaled of loose material.

(i) If it is necessary to place materials, to operate power shovels, derricks, trucks, or other heavy machinery, or to excavate adjacent to active railroads or highways, the sides of the excavation shall be sheet-piled, shored, and braced, as necessary, to resist the extra ground pressure due to such superimposed loads.

(j) Diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering an excavation or trench.

(k) Ground water shall be controlled. Freezing, pumping, drainage, and similar control measures shall be planned and directed by a qualified person. When continuous operation of ground water control equipment is necessary, an emergency power source shall be provided.

(l) Guardrails, fences, barricades, and warning lights, shall comply with Subpart G of this part.

(m) Additional precautions by way of shoring and bracing, or sloping, shall be taken to prevent slides, or cave-ins, when excavations or trenches are made in locations adjacent to backfilled excavations.

(n) Exposed underground utilities shall be adequately supported or suspended to protect employees.

(o) Dusty conditions shall be kept to a safe level for protection of the employees in accordance with Subpart D of this part.

(p) All slopes shall be excavated to at least the angle of repose except for areas where solid rock allows for line drilling or presplitting. (See Table P–1 for proper angles of repose.)

(q) In locations where oxygen deficiency or toxic atmospheric conditions may exist, tests shall be made to ascertain the degree of hazard. Where the levels exceed those established in Subpart D of this part, precautions prescribed therein shall be followed.

(r) In locations where flammable gases may exist, tests shall be made to determine the degree of hazard. When flammable or explosive atmospheres are found, adequate ventilation shall be provided and/or sources of ignition shall be eliminated.

§ 1518.651 Specific excavation requirements.

(a) The sides of excavations, 4 feet or more in depth, unless in solid rock, hard shale, or cemented sand and gravel, shall either be sloped to the angle of repose or be supported by sheeting, sheet piling, cribbing, shoring, or other support system.

(b) When employees are required to work in excavations adjacent to structures or improvements, or are subjected to vibration, or ground water, the support systems shall be planned and designed by a qualified person.

(c) At least two means of exit shall be provided for men working in excavations. Where the width of the excavation exceeds 100 feet, two or more means of exit shall be provided on at least two sides of the excavation.

(d) Where danger of slides or cave-ins exists with banks over 4 feet high, resulting from excavation for bulkhead construction, retaining walls, bridge abutments, wing walls, etc., shoring shall be provided to protect employees unless the banks are sloped to the angle of repose.

§ 1518.652 Specific trenching requirements.

(a) The sides of trenches 4 feet or more in depth, shall be shored, sheeted, braced, sloped, or otherwise supported by means of sufficient strength to protect the employees working within them. In lieu of shoring, the sides of the trench above the 4-foot level may be sloped to preclude collapse, but shall not be steeper than 1-foot rise to each ½-foot horizontal.

(b) Minimum requirements for trench timbering shall be in accordance with Table P–2. (For illustrations of timber shoring, see Figures P–1 through P–6.)

(c) Cross braces or trench jacks shall be placed in true horizontal position and secured to prevent sliding, falling, or kick outs.

(d) Portable trench boxes or sliding trench shields may be used for the protection of personnel. Such trench boxes or shields shall be designed, constructed, and maintained in a manner which will provide protection equal to or greater than the sheeting and shoring required for the situation.

(e) Bracing or shoring of trenches, when used, shall be carried along with the trenching where workers may be exposed. Trench shoring installation shall proceed from the top down.

(f) Braces and diagonal shores in a wood shoring system, when used in trenches having a width greater than 12 feet, shall not be subjected to compressive stress in excess of values given by the following formula:

$$S = 1300 - \frac{20L}{D}$$

$$\text{Maximum ratio } \frac{L}{D} = 50$$

Where:

L=Length, unsupported in inches.
D=Least side of the timber in inches.
S=Allowable stress in pounds per square inch of cross section.

(g) Ladders used as accessways shall extend from the bottom of the trench to not less than 3 feet above the surface. Lateral travel to an exit ladder shall not exceed 50 feet.

(h) Backfilling and removal of trench supports shall progress together from the bottom of the trench. Jacks or braces shall be released slowly and, in unstable soil, ropes shall be used to pull out the jacks or braces from above after men have cleared the trench.

Table P - 1

APPROXIMATE ANGLE OF REPOSE
FOR SLOPING OF SIDES OF EXCAVATIONS

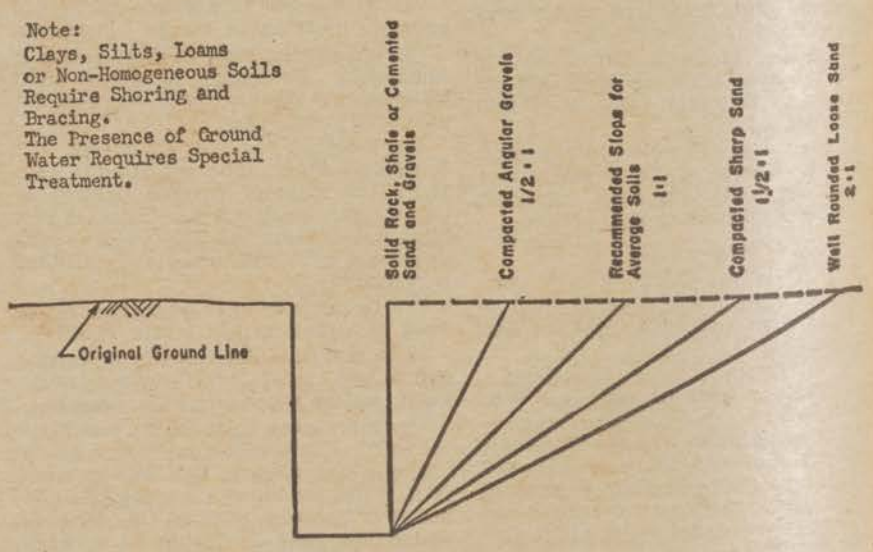


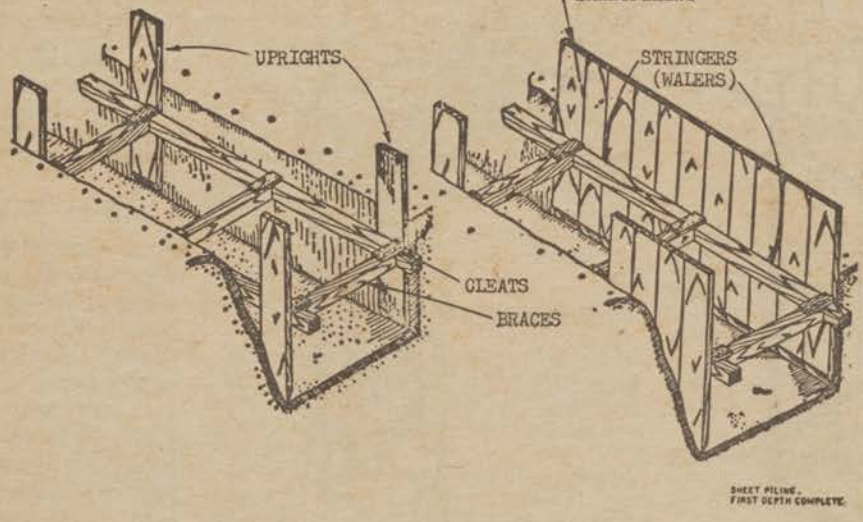
Table P-2

Trench Shoring—Minimum Requirements

Depth of trench	Kind or condition of earth	Size and spacing of members									
		Uprights		Stringers		Cross braces*					
						Width of trench				Max. spacing	
		Min. dim.	Max. spac.	Min. dim.	Max. spac.	Up to 3 ft.	3 to 6 ft.	6 to 9 ft.	9 to 12 ft.	Vert.	Horiz.
Feet		Inches	Feet	Inches	Feet	Inches	Inches	Inches	Inches	Feet	Feet
4 to 10	Hard, compact	3 x 4 or 2 x 6	8	--	--	2x 6	4 x 4	4 x 6	6 x 6	4	6
	Likely to crack	"	3	4 x 6	4	"	"	"	"	"	"
	Soft, sandy, or filled	"	Close sheeting	4 x 6	"	4 x 4	4 x 6	6 x 6	6 x 8	"	"
	Hydrostatic pressure	"	"	6 x 8	"	"	"	"	"	"	"
10 to 15	Hard	"	4	4x6	11.	"	"	"	"	"	"
	Likely to crack	"	2	4 x 6	4	"	"	"	"	"	"
	Soft, sandy, or filled	"	Close sheeting	4 x 6	"	4 x 6	6 x 6	6 x 8	8 x 8	"	"
	Hydrostatic pressure	3x6	"	8 x 10	"	"	"	"	"	"	"
15 to 20	All kinds or conditions	"	Close sheeting	4 x 12	"	4x12	6 x 8	8x8	8 x 10	"	"
Over 20	All kinds or conditions	"	"	6 x 8	"	"	8 x 8	8 x 10	10 x 10	"	"

*Trench jacks may be used in lieu of, or in combination with, cross braces.
Shoring is not required in solid rock, hard shale, or hard slag.
Where desirable, steel sheet piling and bracing of equal strength may be substituted for wood.

Figure P-1

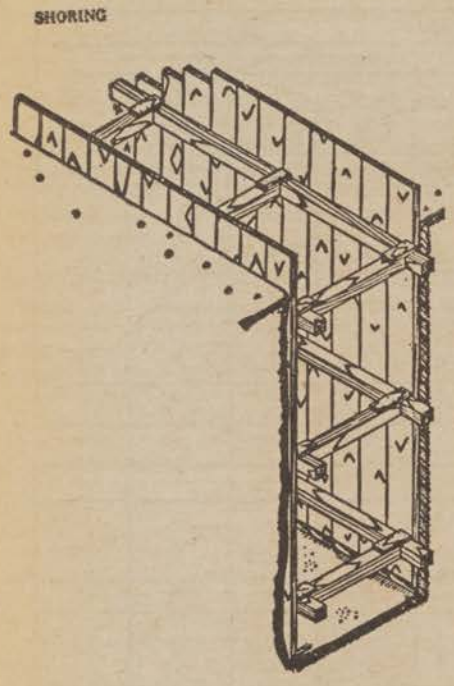


SHORING - TYPICAL SHORING METHOD WITH SPACINGS AND SIZES CONFORMING WITH TABLE P-2.

Figure P-2

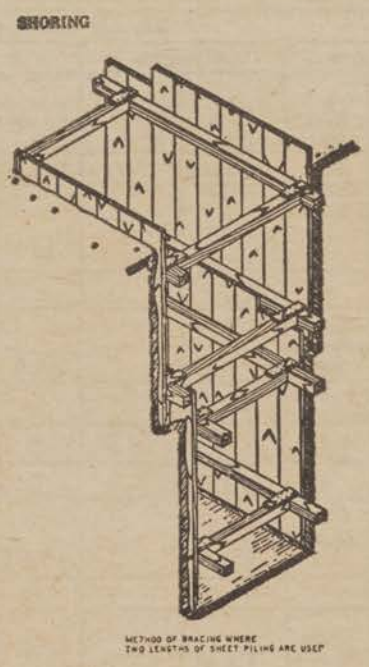
SHORING - COMPLETION OF FIRST DEPTH IN TRENCH SHORING.

Figure P-3



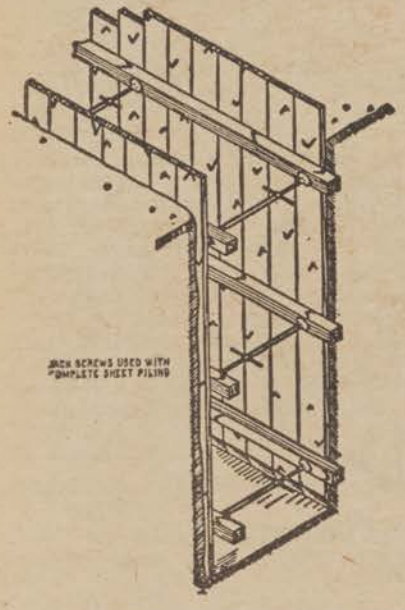
SHORING—COMPLETED TO FULL DEPTH.

Figure P-4



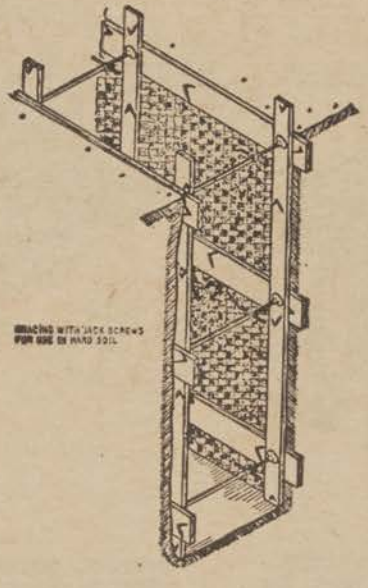
SHORING—COMPLETED TO FULL DEPTH USING TWO LENGTHS OF SHEETING.

Figure P-5



SHORING—SUBSTITUTING TRENCH JACKS FOR CROSS BRACING.

Figure P-6



SHORING—USE OF TRENCH JACKS WITH HORIZONTAL AND VERTICAL PLANKS TO SUPPORT HARD COMPACT MATERIAL.

Subpart Q—Concrete Forms and Shoring

§ 1518.700 General provisions.

(a) *Forms and shoring.* (1) Formwork and shoring shall be designed, erected, supported, braced, and maintained so that it will safely support all vertical and lateral loads that may be applied until such loads can be supported by the concrete structure.

(2) Drawings or plans showing the jack layout, formwork, shoring, working decks, and scaffolding, shall be available at the jobsite.

(3) Stripped forms and shoring shall be removed and stockpiled promptly after stripping, in all areas in which persons are required to work or pass. Protruding nails, wire ties, and other form accessories not necessary to subsequent work shall be pulled, cut, or other means taken to eliminate the hazard.

(4) Imposition of any construction loads on the partially completed structure shall not be permitted unless such loading has been considered in the design and approved by the engineer-architect.

(b) *Vertical slip forms.* (1) The steel rods or pipe on which the jacks climb or by which the forms are lifted shall be specifically designed for the purpose. Such rods shall be adequately braced where not encased in concrete.

(2) Jacks and vertical supports shall be positioned in such a manner that the vertical loads are distributed equally and do not exceed the capacity of the jacks.

(3) The jacks or other lifting devices shall be provided with mechanical dogs or other automatic holding devices to provide protection in case of failure of the power supply or the lifting mechanism.

(4) Lifting shall proceed steadily and uniformly and shall not exceed the predetermined safe rate of lift.

(5) Lateral and diagonal bracing of the forms shall be provided to prevent excessive distortion of the structure during the jacking operation.

(6) During jacking operations, the form structure shall be maintained in line and plumb.

(7) All vertical lift forms shall be provided with scaffolding or work platforms completely encircling the area of placement.

§ 1518.701 Vertical shoring.

(a) *General requirements.* (1) When temporary storage of reinforcing rods, material, or equipment on top of formwork becomes necessary, these areas shall be strengthened to meet the intended loads.

(2) The sills for shoring shall be sound, rigid, and capable of carrying the maximum intended load without settlement or displacement.

(3) All shoring equipment shall be inspected prior to erection to determine that it is as specified in the shoring layout. Any equipment found to be damaged shall not be used for shoring.

(4) Erected shoring equipment shall be inspected immediately prior to, during, and immediately after the placement of concrete. Any shoring equipment that is found to be damaged or weakened shall be immediately reinforced or reshored.

(5) Reshoring shall be provided when necessary to safely support slabs and beams after stripping, or where such members are subjected to superimposed loads due to construction above.

(b) *Tubular welded frame shoring.* (1) Metal tubular frames used for shoring shall not be loaded beyond the safe working load recommended by the manufacturer.

(2) All locking devices on frames and braces shall be in good working order; coupling pins shall align the frame or panel legs; pivoted cross braces shall have their center pivot in place; and all components shall be in a condition similar to that of original manufacture.

(3) When checking the erected shoring frames with the shoring layout, the spacing between towers and cross brace spacing shall not exceed that shown on the layout, and all locking devices shall be in the closed position.

(4) Devices for attaching the external lateral stability bracing shall be securely fastened to the legs of the shoring frames.

(5) All baseplates, shore heads, extension devices, or adjustment screws shall be in firm contact with the footing sill and the form.

(c) *Tube and coupler shoring.* (1) Couplers (clamps) shall not be used if they are deformed, broken, or have defective or missing threads on bolts, or other defects.

(2) The material used for the couplers (clamps) shall be of a structural type such as drop-forged steel, malleable iron, or structural grade aluminum. Gray cast iron shall not be used.

(3) When checking the erected shoring towers with the shoring layout, the spacing between posts shall not exceed that shown on the layout, and all interlocking of tubular members and tightness of couples shall be checked.

(4) All baseplates, shore heads, extension devices, or adjustment screws shall be in firm contact with the footing sill and the form material and shall be snug against the posts.

Subpart R—Steel Erection

§ 1518.750 Flooring requirements.

(a) *Permanent flooring—skeleton steel construction in tiered buildings.* (1) The permanent floors shall be installed as the erection of structural members progresses, and there shall be not more than eight stories between the erection floor and the uppermost permanent floor.

(2) At no time shall there be more than four floors or 48 feet of unfinished bolting or welding above the foundation or uppermost permanently secured floor.

(b) *Temporary flooring—skeleton steel construction in tiered buildings.* (1) (i) The derrick or erection floor shall be solidly planked over its entire surface except for access openings. Planking shall be of proper thickness to carry the working load, but shall be not less than 2 inches thick full size undressed, and shall be laid tight and secured to prevent movement.

(ii) There shall also be a tight and substantial floor within two stories or 30 feet, whichever is less, below and directly under the portion of each tier of beams on which bolting, riveting, welding, or painting is being done.

(iii) Floor periphery—safety railing. A safety railing of ½-inch manila rope or equal shall be installed around the periphery of all temporary-planked or temporary metal-decked floors of tier buildings and other multifloored structures during structural steel assembly.

(2) Where erection is being done by means of a crane operating on the ground, a tight and substantial floor shall be maintained within two stories or 30 feet, whichever is less, below and directly under that portion of each tier of beams on which bolting, riveting, welding, or painting is being done.

(c) *Flooring—other construction.* (1) In the erection of a building having double wood floor construction, the rough flooring shall be completed as the building progresses, including the tier below the one on which floor joists are being installed.

(2) For single wood floor or other flooring systems, the floor immediately below the story where the floor joists are being installed shall be kept planked over.

§ 1518.751 Structural steel assembly.

(a) During the final placing of solid web structural members, the load shall not be released from the hoisting line until the members are secured with not less than two bolts, or the equivalent.

(b) Open web steel joists shall not be placed on any structural steel framework unless such framework is safely bolted or welded.

(c) In steel framing, where bar joists are utilized, and columns are not framed in at least two directions with structural steel members, a bar joist shall be field-bolted at columns to provide lateral stability during construction.

(i) Where long span joists, 40 feet or longer, are used, a center row of bolted bridging shall be installed to provide lateral stability during construction prior to slacking of hoisting line.

(ii) No load shall be placed on open web steel joists until these security requirements are met.

§ 1518.752 Bolting, riveting, fitting-up, and plumbing-up.

(a) General requirements. (1) Containers shall be provided for storing or carrying rivets, bolts, and drift pins, and secured against accidental displacement when aloft.

(2) Pneumatic hand tools shall be disconnected from the power source, and pressure in hose lines shall be released, before any adjustments or repairs are made.

(3) Air line hose sections shall be tied together except when quick disconnect couplers are used to join sections.

(4) Eye protection shall be provided in accordance with Subpart E of this part.

(b) Bolting. (1) When bolts or drift pins are being knocked out, means shall be provided to keep them from falling.

(2) Impact wrenches shall be provided with a locking device for retaining the socket.

(c) Riveting. (1) Riveting shall not be done in the vicinity of combustible material unless precautions are taken to prevent fire.

(2) When rivet heads are knocked off, or backed out, means shall be provided to keep them from falling.

(3) A safety wire shall be properly installed on the snap and on the handle of the pneumatic riveting hammer and shall be used at all times. The wire size shall be not less than No. 9 (B&S gauge), leaving the handle and annealed No. 14 on the snap, or equivalent.

(d) Plumbing-up. (1) Connections of the equipment used in plumbing-up shall be properly secured.

(2) The turnbuckles shall be secured to prevent unwinding while under stress.

(3) Plumbing-up guys related equipment shall be placed so that employees can get at the connection points.

(4) Plumbing-up guys shall be removed only under the supervision of a competent person.

(e) Wood planking shall be of proper thickness to carry the working load, but shall be not less than 2 inches thick full size undressed, exterior grade plywood, at least ¾-inch thick, or equivalent material.

(f) Metal decking of sufficient strength shall be laid tight and secured to prevent movement.

(g) Planks shall overlap the bearing on each end by a minimum of 12 inches.

(h) Wire mesh, exterior plywood, or equivalent, shall be used around columns where planks do not fit tightly.

(i) Provisions shall be made to secure temporary flooring against displacement.

(j) All unused openings in floors, temporary or permanent, shall be completely planked over or guarded in accordance with Subpart M of this part.

Subpart S—Tunnels and Shafts, Caissons, Cofferdams, and Compressed Air

§ 1518.800 Tunnels and shafts.

(a) *General.* (1) The specific requirements of this Subpart S, Tunnels, Shafts, Caissons, Cofferdams, and Compressed Air, shall be complied with as well as the applicable provisions of all other subparts of this part.

(2) Safe means of access shall be provided and maintained to all working places.

(3) When ladders and stairways are provided in shafts and steep inclines, they shall meet the requirements of Subparts L and M of this part.

(4) Access to unattended underground openings shall be restricted by gates or doors, or the openings shall be fenced and posted.

(5) Subsidence areas that present hazards shall be fenced and posted.

(6) Each operation shall have a check-in and check-out system that will provide positive identification of every employee underground. An accurate record of the employees underground shall be kept on the surface.

(b) *Emergency provisions.* (1) Evacuation plans and procedures shall be developed and made known to the employees.

(2) Emergency hoisting facilities shall be readily available at shafts more than 50 feet in depth, unless hoisting facilities are provided that are independent of electrical power failures.

(3) Bureau of Mines approved self-rescuers shall be available near the advancing face to equip each face employee. Such equipment shall be on the haulage equipment and in other areas where employees might be trapped by smoke or gas, and shall be maintained in good condition.

(4) Telephone or other voice communication shall be provided between the work face and the tunnel portal, and such systems shall be independent of the tunnel power supply.

(c) *Air Quality and Ventilation*—(1) *Air quality and quantity.* (i) Instruments shall be provided to test the atmosphere quantitatively for carbon monoxide, nitrogen dioxide, other gases, dusts, mists, and fumes that occur in the tunnel or shaft. Tests shall be conducted as frequently as necessary to assure that the required quality and quantity of air is maintained. A record of all tests shall be maintained and be kept available.

(ii) Flame safety lamps, or other suitable devices, shall be used to test for oxygen deficiency.

(iii) Respirators shall not be substituted for environmental control measures. However, where environmental controls have not been developed, or when necessary by the nature of the work involved (for example, welding, sand blasting, lead burning), an employee may work for short periods of time in concentrations of airborne contaminants which exceed ceiling "C" limits or the limit of permissible excursions referred to in subdivision (iv) and (v) of this subparagraph, if such employee wears a respiratory protective device approved by the Bureau of Mines as protection against the particular hazards involved.

(iv) The exposure to airborne, contaminants of an employee working in a tunnel or shaft shall not exceed, on the basis of a time weighted average, the threshold limit values adopted by the American Conference of Governmental Industrial Hygienists, as set forth and explained in the 1970 edition of the Conference's publication entitled "Threshold Limit Values of Airborne Contaminants." Excursions above the listed threshold limit values shall not be of a greater magnitude than is characterized as permissible by the Conference. This subdivision (iv) does not apply to airborne contaminants given a "C" designation by the Conference; for example, nitrogen dioxide.

(v) Employees shall be withdrawn from areas in which there is a concentration of an airborne contaminant given a "C" designation by the Conference which exceeds the threshold limit value (ceiling "C" limit) listed for that contaminant.

(vi) Atmospheres in all active areas shall contain at least 20 percent oxygen.

(2) *Ventilation.* (i) Tunnels shall be provided with mechanically induced primary ventilation in all work areas. The direction of airflow shall be reversible.

(ii) Ventilation doors, not operated mechanically, shall be designed and installed so that they are self-closing and will remain closed regardless of the direction of the air movement.

(iii) When there has been a failure of ventilation, and ventilation has been restored in a reasonable time, all places where flammable gas may have accumulated shall be examined by a competent person and determined to be free of flammable gas before power is restored and work resumed.

(iv) When the main fan or fans have been shut down with all employees out of the tunnel or shaft, no employee, other than those qualified to examine the tunnel or shaft, or other authorized employee, shall go underground until the fans have been started, the work areas examined for gas and other hazards, and declared safe.

(v) The supply of fresh air shall not be less than 200 cubic feet per minute for each employee underground. The linear velocity of the air flow in the tunnel bore shall not be less than 30 feet per minute in those tunnels where blasting or rock drilling is conducted or where there are other conditions that are likely to produce dusts, fumes, vapors, or gases in harmful quantities.

(vi) If 1.5 percent or higher concentration of flammable gas is detected in air returning from an underground working place or places, the employees shall be withdrawn and the power cut off to the portion of the area endangered by such flammable gas until the concentration of such gas is reduced to 1 percent or less.

(vii) Internal combustion engines other than mobile diesel shall not be used underground. Mobile diesel-powered equipment used underground shall be approved or acceptable to the Labor Department. Approval plates shall be kept affixed to approved equipment and maintained so the inscription thereon is readable.

(d) *Illumination.* (1) Sufficient lighting shall be provided, in accordance with the requirements of Table D–3 of Subpart D of this part, to permit safe operations at the face as well as in the general tunnel or shaft area and at the employees' workplace.

(e) *Fire prevention and control*—(1) *General.* (i) The requirements for fire prevention and protection specified in Subpart F of this part shall be complied with in all tunnel and shaft operations.

(ii) Signs warning against smoking and open flames shall be posted so they can be readily seen in areas or places where fire or explosion hazards exist.

(iii) Not more than a 1 day's supply of diesel fuel shall be stored underground.

(iv) Gasoline or liquefied petroleum gases shall not be taken, stored, or used underground.

(v) Oil, grease, or fuel stored underground shall be kept in tightly sealed containers in fire-resistant areas, at safe distances from explosives magazines, electrical installations, and shaft stations.

(vi) Air that has passed through underground oil or fuel-storage areas shall not be used to ventilate working areas.

(vii) Approved fire-resistant hydraulic fluids shall be used in hydraulically actuated underground machinery and equipment.

(viii) Fires shall not be built underground.

(ix) Noncombustible barriers shall be installed below welding or burning operations in or over a shaft or raise.

(x) Fire extinguishers or equivalent protection shall be provided at the head and tail pulleys or underground belt conveyors and at 300-foot intervals along the belt line.

(xi) At tunnel operations, employing 25 or more men at one time underground, at least two rescue crews (10 men divided between shifts) shall be trained annually in rescue procedures, in the use, care, and limitations of oxygen breathing apparatus, and the use and maintenance of firefighting equipment. Not less than one crew (5 men) shall be trained at smaller operations.

(f) *Personal protective equipment.* Protective clothing or equipment shall be worn as specified in Subparts D and E of this part.

(g) *Noise.* (1) Permissible noise exposures shall conform to those specified in Subpart D of this part.

(h) *Ground support*—(1) *Tunnel portal area.* Portals shall be protected and supported where loose soil or rock or fractured material is encountered.

(2) *Tunnel area.* (i) The employer shall examine and test the roof, face, and walls of the work area at the start of each shift and frequently thereafter.

(ii) Loose ground shall be taken down or supported. Ground conditions along haulage ways and travelways shall be examined periodically and scaled or supported as necessary.

(iii) Torque meters and torque wrenches shall be available at tunnels where rock bolts are used for ground support. Frequent tests shall be made to determine if bolts meet the required torque. The test frequency shall be determined by rock conditions and distance from vibration sources.

(iv) Damaged or dislodged tunnel supports, whether steel sets or timber, shall be repaired or replaced. New supports shall be installed whenever possible before removing the damaged supports.

(v) All sets, including horseshoe-shaped or arched rib steel sets, shall be designed and installed so that the bottoms will have required anchorage to

prevent pressures from pushing them inward into the excavation. Lateral bracing shall be provided between sets to further stabilize the support.

(3) *Shafts.* (i) Small diameter shafts, which employees are required to enter, shall be provided with a steel casing of required strength to support the surrounding earth.

(ii) The casing shall be provided the full depth of the shaft, or at least 5 feet into solid rock if possible, and shall extend at least 1 foot above ground level.

(iii) All wells or shafts over 5 feet in depth shall be retained with lagging, spiling, or casing.

(iv) In shafts, the employer shall inspect the walls, ladders, timbers, blocking, and wedges of the last set to determine if they have loosened following blasting operations. Where found unsafe, corrections shall be made before shift operations are started.

(i) *Drilling.* (1) Equipment that is to be used during a shift shall be inspected each shift by a competent person. Equipment defects affecting safety shall be corrected before the equipment is used.

(2) The drilling area shall be inspected for hazards before starting the drilling operation.

(3) Employees shall not be allowed on a drill mast while the drill bit is in operation.

(4) When a drill is being moved from one drilling area to another, drill steel, tools, and other equipment shall be secured, and the mast placed in a safe position.

(5) Receptacles or racks shall be provided for drill steel stored on jumbos.

(6) Before drilling cycle is started, warning shall be given to men working below jumbo decks.

(7) Drills on columns shall be anchored firmly before drilling is started and shall be retightened frequently thereafter.

(j) *Blasting.* All blasting and explosives-handling operations shall be conducted in compliance with Subpart U of this part.

(k) *Haulage.* (1) Equipment that is to be used during a shift shall be inspected by a competent person each shift. Equipment defects affecting safety shall be corrected before the equipment is used.

(2) Powered mobile equipment shall be provided with adequate brakes.

(3) Powered mobile haulage equipment shall be provided with audible warning devices. Lights shall be provided on both ends when required.

(4) Cab windows shall be of safety glass, or equivalent, in good condition, and shall be kept clean.

(5) Adequate backstops or brakes shall be installed on inclined conveyor drive units to prevent conveyors from running in reverse and creating a hazard to employees.

(6) No employee shall be permitted to ride a power-driven chain, belt, or bucket conveyor, unless the conveyor is specifically designed for the transportation of employees.

(7) The employer shall not permit employees to ride in dippers, shovel buckets, forks, clamshells, or in the beds of dump trucks, for the purpose of transportation.

(8) Electrically powered mobile equipment shall not be left unattended unless the master switch is in the off position, all operating controls are in the neutral position, and the brakes are set, or other equivalent precautions are taken against rolling.

(9) When dumping cars by hand, the car dumps shall be provided with tiedown chains or bumper blocks to prevent cars from overturning.

(10) Rocker-bottom or bottom-dump cars shall be equipped with positive locking devices.

(11) Equipment which is to be hauled shall be so loaded and protected as to prevent sliding or spillage.

(12) Parked railcars, unless held effectively by brakes, shall be blocked securely.

(13) Berms, bumper blocks, safety hooks, or similar means shall be provided to prevent overtravel and overturning at dumping locations.

(14) Where necessary, bumper blocks, or the equivalent, shall be provided at all track dead ends.

(15) Supplies, materials, and tools, other than small handtools, shall not be transported with employees in mantrip cars.

(l) *Electrical equipment.* (1) Electrical equipment shall conform to the requirements of Subpart K of this part.

(2) Powerlines shall be well separated or insulated from waterlines, telephone lines, and airlines.

§ 1518.801 Caissons.

(a) Wherever, in caisson work in which compressed air is used, and the working chamber is less than 11 feet in length, and when such caissons are at any time suspended or hung while work is in progress so that the bottom of the excavation is more than 9 feet below the deck of the working chamber, a shield shall be erected therein for the protection of the employees.

(b) Shafts shall be subjected to a hydrostatic or air-pressure test, at which pressure they shall be tight. The shaft shall be stamped on the outside shell about 12 inches from each flange to show the pressure to which they have been subjected.

(c) Whenever a shaft is used, it shall be provided, where space permits, with a safe, proper, and suitable staircase for its entire length, including landing platforms, not more than 20 feet apart. Where this is impracticable, suitable ladders shall be installed with landing platforms located about 20 feet apart to break the climb.

(d) All caissons, having a diameter or side greater than 10 feet long, shall be provided with a man lock and shaft for the exclusive use of employees.

(e) In addition to the gage in the locks, an accurate gage shall be maintained on the outer and inner side of each bulkhead. These gages shall be accessible at all times and kept in accurate working order.

(f) In caisson operations where employees are exposed to compressed air working environments, the requirements contained in § 1518.803 shall be complied with.

§ 1518.802 Cofferdams.

(a) If overtopping of the cofferdam by high waters is possible, means shall be provided for controlled flooding of the work area.

(b) Warning signals for evacuation of employees in case of emergency shall be developed and posted.

(c) Cofferdam walkways, bridges, or ramps, shall be provided with guardrails as specified in Subpart M of this part.

(d) Cofferdam located close to naviga-

(b) Cofferdams located close to navigable shipping channels shall be protected from damage by vessels in transit by means of dolphin pilings strategically placed to fend off vessels.

§ 1518.803 Compressed air.

(a) *General provisions.* (1) There shall be present, at all times, at least one competent person designated by and representing the employer, who shall be familiar with this subpart in all respects, and responsible for full compliance with these and other applicable subparts.

(2) Every employee shall be instructed in the rules and regulations which concern his safety or the safety of others.

(b) *Medical attendance, examination, and regulations.* (1) There shall be retained one or more licensed physicians familiar with and experienced in the physical requirements and the medical aspects of compressed air work and the treatment of decompression illness. He shall be available at all times while work is in progress in order to provide medical supervision of employees employed in compressed air work. He shall himself be physically qualified and be willing to enter a pressurized environment.

(2) No employee shall be permitted to enter a compressed air environment until he has been examined by the physician and reported by him to be physically qualified to engage in such work.

(3) In the event an employee is absent from work for 10 days, or is absent due to sickness or injury, he shall not resume work until he is reexamined by the physician, and his physical condition reported, as provided in this paragraph, to be such as to permit him to work in compressed air.

(4) After an employee has been employed continuously in compressed air for a period designated by the physician, but not to exceed 1 year, he shall be reexamined by the physician to determine if he is still physically qualified to engage in compressed air work.

(5) Such physician shall at all times keep a complete and full record of examinations made by him. The physician shall also keep an accurate record of any decompression illness or other illness or injury incapacitating any employee for

work, and of all loss of life that occurs in the operation of a tunnel, caisson, or other compartment in which compressed air is used.

(6) Records shall be available for the inspection of the Secretary or his representatives, and a copy thereof shall be forwarded to the Bureau of Labor Standards within 48 hours following the occurrence of the accident, death, injury, or decompression illness. It shall state as fully as possible the cause of said death or decompression illness, and the place where the injured or sick employee was taken, and such other relative information as may be required by the Secretary.

(7) A medical lock shall be established and maintained in immediate working order whenever air pressure in the working chamber is increased above the normal atmosphere.

(8) The medical lock shall:

(i) Have at least 6 feet of clear headroom at the center, and be subdivided into not less than two compartments;

(ii) Be readily accessible to employees working under compressed air;

(iii) Be kept ready for immediate use for at least 5 hours subsequent to the emergence of any employee from the working chamber;

(iv) Be properly heated, lighted and ventilated;

(v) Be maintained in a sanitary condition;

(vi) Have a nonshatterable port through which the occupant(s) may be kept under constant observation;

(vii) Be designed for a working pressure of 75 p.s.i.g.

(viii) Be equipped with internal controls which may be overridden by external controls;

(ix) Be provided with air pressure gauges to show the air pressure within each compartment to observers inside and outside the medical lock.

(x) Be equipped with a manual type sprinkler system that can be activated inside the lock or by the outside lock tender.

(xi) Be provided with oxygen lines and fittings leading into external tanks. The lines shall be fitted with check valves to prevent reverse flow. The oxygen system inside the chamber shall be of a closed circuit design and be so designed as to automatically shut off the oxygen supply whenever the fire system is activated.

(xii) Be in constant charge of an attendant under the direct control of the retained physician. The attendant shall be trained in the use of the lock and suitably instructed regarding steps to be taken in the treatment of employee exhibiting symptoms compatible with a diagnosis of decompression illness;

(xiii) Be adjacent to an adequate emergency medical facility;

(xiv) The medical facility shall be equipped with demand-type oxygen inhalation equipment approved by the U.S. Bureau of Mines;

(xv) Be capable of being maintained at a temperature, in use, not to exceed 90° F. nor be less than 70° F.; and

(xvi) Be provided with sources of air, free of oil and carbon monoxide, for normal and emergency use, which are capable of raising the air pressure in the lock from 0 to 75 p.s.i.g. in 5 minutes.

(9) Identification badges shall be furnished to all employees, indicating that the wearer is a compressed air worker. The badge shall give employee's name, address of the medical lock, the phone number of the licensed physician for the compressed air project, and contain instructions that in case of emergency of unknown or doubtful cause or illness, the wearer shall be rushed to the medical lock. The badge shall be worn at all times—off the job, as well as on the job.

(c) *Telephone and signal communication.* (1) Effective and reliable means of communication, such as bells, whistles, or telephones, shall be maintained at all times between all the following locations:

(i) The working chamber face;

(ii) The working chamber side of the man lock near the door;

(iii) The interior of the man lock;

(iv) Lock attendant's station;

(v) The compressor plant;

(vi) The first-aid station;

(vii) The emergency lock (if one is required); and

(viii) The special decompression chamber (if one is required).

(d) *Signs and records.* (1) The time of decompression shall be posted in each man lock as follows:

TIME OF DECOMPRESSION FOR THIS LOCK

------ pounds to ------ pounds in ------ minutes.
------ pounds to ------ pounds in ------ minutes.

This form shall be posted in the Man Lock at all times.

(Signed by) ----------
(Superintendent)

(2) Any code of signals used shall be conspicuously posted near workplace entrances and such other locations as may be necessary to bring them to the attention of all employees concerned.

(3) For each 8-hour shift, a record of employees employed under air pressure shall be kept by an employee who shall remain outside the lock near the entrance. This record shall show the period each employee spends in the air chamber and the time taken from decompression. A copy shall be submitted to the appointed physician after each shift.

(e) *Compression.* (1) Every employee going under air pressure for the first time shall be instructed on how to avoid excessive discomfort.

(2) During the compression of employees, the pressure shall not be increased to more than 3 p.s.i.g. within the first minute. The pressure shall be held at 3 p.s.i.g. and again at 7 p.s.i.g. sufficiently long to determine if any employees are experiencing discomfort.

(3) After the first minute the pressure shall be raised uniformly and at a rate not to exceed 10 p.s.i. per minute.

(4) If any employee complains of discomfort, the pressure shall be held to determine if the symptoms are relieved. If, after 5 minutes the discomfort does not disappear, the lock attendant shall gradually reduce the pressure until the employee signals that the discomfort has ceased. If he does not indicate that the discomfort has disappeared, the lock attendant shall reduce the pressure to atmospheric and the employee shall be released from the lock.

(5) No employee shall be subjected to pressure exceeding 50 pounds per square inch except in emergency.

(f) *Decompression.* (1) Decompression to normal condition shall be in accordance with the Decompression Tables in Appendix A of this subpart.

(2) In the event it is necessary for an employee to be in compressed air more than once in a 24-hour period, the appointed physician shall be responsible for the establishment of methods and procedures of decompression applicable to repetitive exposures.

(3) If decanting is necessary, the appointed physician shall establish procedures before any employee is permitted to be decompressed by decanting methods. The period of time that the employees spend at atmospheric pressure between the decompression following the shift and recompression shall not exceed 5 minutes.

(g) *Man locks and special decompression chambers*—(1) *Man locks.* (i) Except in emergency, no employees employed in compressed air shall be permitted to pass from the working chamber to atmospheric pressure until after decompression, in accordance with the procedures in this subpart.

(ii) The lock attendant in charge of a man lock shall be under the direct supervision of the appointed physician. He shall be stationed at the lock controls on the free air side during the period of compression and decompression and shall remain at the lock control station whenever there are men in the working chamber or in the man lock.

(iii) Except where air pressure in the working chamber is below 12 p.s.i.g., each man lock shall be equipped with automatic controls which, through taped programs, cams, or similar apparatus, shall automatically regulate decompressions. It shall also be equipped with manual controls to permit the lock attendant to override the automatic mechanism in the event of an emergency.

(iv) A manual control, which can be used in the event of an emergency, shall be placed inside the man lock.

(v) A clock, thermometer, and continuous recording pressure gauge with a 4-hour graph shall be installed outside of each man lock and shall be changed prior to each shift's decompression. The chart shall be of sufficient size to register a legible record of variations in pressure within the man lock and shall be visible to the lock attendant. A copy of each graph shall be submitted to the appointed physician after each shift. In addition, a pressure gauge, clock, and thermometer shall also be installed in each man lock. Additional fittings shall be provided so that test gauges may be attached whenever necessary.

(vi) Except where air pressure is below 14 p.s.i.g. and there is no danger of rapid flooding, all caissons having a working area greater than 150 square feet, and each bulkhead in tunnels of 14 feet or more in diameter, or equivalent area, shall have at least two locks in perfect working condition, one of which shall be used as a man lock.

(vii) Where only a combination man-and-materials lock is required, this single lock shall be of sufficient capacity to hold the employees constituting two successive shifts.

(viii) Emergency locks shall be large enough to hold an entire heading shift.

(ix) The man lock shall be large enough so that those using it are not compelled to be in a cramped position, and shall not have less than 5 feet clear head room at the center and a minimum of 30 cubic feet of air space per occupant.

(x) Locks on caissons shall be so located that the bottom door shall be not less than 3 feet above the water level surrounding the caisson on the outside. (The water level, where it is affected by tides, is construed to mean high tide.)

(xi) In addition to the pressure gauge in the locks, an accurate pressure gauge shall be maintained on the outer and inner side of each bulkhead. These gauges shall be accessible at all times and shall be kept in accurate working order.

(xii) Man locks shall have an observation port at least 4 inches in diameter located in such a position that all occupants of the man lock may be observed from the working chamber and from the free air side of the lock.

(xiii) Adequate ventilation in the lock shall be provided.

(xiv) Man locks shall be maintained at a minimum temperature of 70° F.

(xv) When locks are not in use and employees are in the working chamber, lock doors shall be kept open to the working chamber, where practicable.

(xvi) A special decompression chamber of sufficient size to accommodate the entire force of employees being decompressed at the end of a shift shall be provided whenever the regularly established working period requires a total time of decompression exceeding 75 minutes.

(2) *Special decompression chamber.* (i) The headroom in the special decompression chamber shall be not less than 7 feet and the cubical content shall provide at least 50 cubic feet of airspace for each employee. For each occupant, there shall be provided 4 square feet of free walking area and 3 square feet of seating space, exclusive of area required for lavatory and toilet facilities. The rated capacity shall be based on the stated minimum space per employee and shall be posted at the chamber entrance. The posted capacity shall not be exceeded, except in case of emergency.

(ii) Each special decompression chamber shall be equipped with the following:

(*a*) A clock or clocks suitably placed so that the attendant and the chamber occupants and readily ascertain the time;

(*b*) Pressure gauges which will indicate to the attendants and to the chamber occupants the pressure in the chamber;

(*c*) Valves to enable the attendant to control the supply and discharge of compressed air into and from the chamber;

(*d*) Valves and pipes, in connection with the air supply and exhaust, arranged so that the chamber pressure can be controlled from within and without;

(*e*) Effective means of oral intercommunication between the attendant, occupants of the chamber, and the air compressor plant; and

(*f*) An observation port at the entrance to permit observation of the chamber occupants.

(iii) Seating facilities in special decompression chambers shall be so arranged as to permit a normal sitting posture without cramping. Seating space, not less than 18 inches by 24 inches wide, shall be provided per occupant.

(iv) Adequate toilet and washing facilities, in a screened or enclosed recess, shall be provided. Toilet bowls shall have a built-in protector on the rim so that an air space is created when the seat lid is closed.

(v) Fresh and pure drinking water shall be available. This may be accomplished by either piping water into the special decompression chamber and providing drinking fountains, or by providing individual canteens, or by some other sanitary means. Community drinking vessels are prohibited.

(vi) No refuse or discarded material of any kind shall be permitted to accumulate, and the chamber shall be kept clean.

(vii) Unless the special decompression chamber is serving as the man lock to atmospheric pressure, the special decompression chamber shall be situated, where practicable, adjacent to the man lock on the atmospheric pressure side of the bulkhead. A passageway shall be provided, connecting the special chamber with the man lock, to permit employees in the process of decompression to move from the man lock to the special chamber without a reduction in the ambient pressure from that designated for the next stage of decompression. The passageway shall be so arranged as to not interfere with the normal operation of the man lock, nor with the release of the occupants of the special chamber to atmospheric pressure upon the completion of the decompression procedure.

(h) *Compressor plant and air supply.* (1) At all times there shall be a thoroughly experienced, competent, and reliable person on duty at the air control valves as a gauge tender who shall regulate the pressure in the working areas. During tunneling operations, one gauge tender may regulate the pressure in not more than two headings: *Provided,* That the gauge and controls are all in one location. In caisson work, there shall be a gauge tender for each caisson.

(2) The low air compressor plant shall be of sufficient capacity to not only permit the work to be done safely, but shall also provide a margin to meet emergencies and repairs.

(3) Low air compressor units shall have at least two independent and separate sources of power supply and each shall be capable of operating the entire low air plant and its accessory systems.

(4) The capacity, arrangement, and number of compressors shall be sufficient to maintain the necessary pressure without overloading the equipment and to assure maintenance of such pressure in the working chamber during periods of breakdown, repair, or emergency.

(5) Switching from one independent source of power supply to the other shall be done periodically to ensure the workability of the apparatus in an emergency.

(6) Duplicate low-pressure air feedlines and regulating valves shall be provided between the source of air supply and a point beyond the locks with one of the lines extending to within 100 feet of the working face.

(7) All high- and low-pressure air supply lines shall be equipped with check valves.

(8) Low-pressure air shall be regulated automatically. In addition, manually operated valves shall be provided for emergency conditions.

(9) The air intakes for all air compressors shall be located at a place where fumes, exhaust gases, and other air contaminants will be at a minimum.

(10) Gauges indicating the pressure in the working chamber shall be installed in the compressor building, the lock attendant's station, and at the employer's field office.

(i) *Ventilation and air quality.* (1) Exhaust valves and exhaust pipes shall be provided and operated so that the working chamber shall be well ventilated, and there shall be no pockets of dead air. Outlets may be required at intermediate points along the main low-pressure air supply line to the heading to eliminate such pockets of dead air. Ventilating air shall be not less than 30 cubic feet per man per minute.

(2) The air in the workplace shall be analyzed by the contractor not less than once each shift, and records of such tests shall be within the threshold limit values the work is in progress. The test results shall be within the threshold limit values specified in Subpart D of this part, for hazardous gases, and within 10 percent of the lower explosive limit of flammable gases. If these limits are not met, immediate action to correct the situation shall be taken by the employer.

(3) The temperature of all working chambers which are subjected to air pressure shall, by means of after-coolers or other suitable devices, be maintained at a temperature not to exceed 85° F.

(4) Forced ventilation shall be provided during decompression. During the entire decompression period, forced ventilation through chemical or mechanical

air purifying devices that will ensure a source of fresh air shall be provided.

(5) Whenever heat-producing machines (moles, shields) are used in compressed air tunnel operations, a positive means of removing the heat build-up at the heading shall be provided.

(j) *Electricity.* (1) All lighting in compressed-air chambers shall be by electricity exclusively, and two independent electric-lighting systems with independent sources of supply shall be used. The emergency source shall be arranged to become automatically operative in the event of failure of the regularly used source.

(2) The minimum intensity of light on any walkway, ladder, stairway, or working level shall be not less than 10 foot-candles, and in all workplaces the lighting shall at all times be such as to enable employees to see clearly.

(3) All electrical equipment, and wiring for light and power circuits, shall comply with requirements of the National Electrical Code for use in damp, hazardous, high temperature, and compressed air environments.

(4) External parts of lighting fixtures and all other electrical equipment, when within 8 feet of the floor, shall be constructed of noncombustible, nonabsorptive, insulating materials, except that metal may be used if it is effectively grounded.

(5) Portable lamps shall be equipped with noncombustible, nonabsorptive, insulating sockets, approved handles, basket guards, and approved cords.

(6) The use of worn or defective portable and pendant conductors is prohibited.

(k) *Sanitation.* (1) Sanitary, heated, lighted, and ventilated dressing rooms and drying rooms shall be provided for all employees engaged in compressed air work. Such rooms shall contain suitable benches and lockers. Bathing accommodations (showers at the ratio of one to eight men per shift), equipped with running hot and cold water, and suitable and adequate toilet accommodations, shall be provided. One toilet for each 15 employees, or fractional part thereof, shall be provided.

(2) All parts of caissons and other working compartments shall be kept in a sanitary condition.

(l) *Fire prevention and protection.* (1) Firefighting equipment shall be available at all times and shall be maintained in working condition.

(2) While welding or flame-cutting is being done in compressed air, a firewatch with a fire hose or approved extinguisher shall stand by until such operation is completed.

(3) Shafts and caissons containing flammable material of any kind, either above or below ground, shall be provided with a waterline and a fire hose connected thereto, so arranged that all points of the shaft or caisson are within reach of the hose stream.

(4) Fire hose shall be at least 1½ inches in nominal diameter; the water pressure shall at all times be adequate for efficient operation of the type of nozzle used; and the water supply shall be such as to ensure an uninterrupted flow. Fire hose, when not in use, shall be located or guarded to prevent injury thereto.

(5) The power house, compressor house, and all buildings housing ventilating equipment, shall be provided with at least one hose connection in the waterline, with a fire hose connected thereto. A fire hose shall be maintained within reach of structures of wood over or near shafts.

(6) Tunnels shall be provided with a 2-inch minimum diameter waterline extending into the working chamber and to within 100 feet of the working face. Such line shall have hose outlets with 100 feet of fire hose attached and maintained as follows: One at the working face; one immediately inside of the bulkhead of the working chamber; and one immediately outside such bulkhead. In addition, hose outlets shall be provided at 200-foot intervals throughout the length of the tunnel, and 100 feet of fire hose shall be attached to the outlet nearest to any location where flammable material is being kept or stored or where any flame is being used.

(7) In addition to fire hose protection required by this subpart, on every floor of every building not under compressed air, but used in connection with the compressed air work, there shall be provided at least one approved fire extinguisher of the proper type for the hazard involved. At least two approved fire extinguishers shall be provided in the working chamber as follows: One at the working face and one immediately inside the bulkhead (pressure side). Extinguishers in the working chamber shall use water as the primary extinguishing agent and shall not use any extinguishing agent which could be harmful to the employees in the working chamber. The fire extinguisher shall be protected from damage.

(8) Highly combustible materials shall not be used or stored in the working chamber. Wood, paper, and similar combustible material shall not be used in the working chamber in quantities which could cause a fire hazard. The compressor building shall be constructed of noncombustible material.

(9) Man locks shall be equipped with a manual type fire extinguisher system that can be activated inside the man lock and also by the outside lock attendant. In addition, a fire hose and portable fire extinguisher shall be provided inside and outside the man lock. The portable fire extinguisher shall be the dry chemical type.

(10) Equipment, fixtures, and furniture in man locks and special decompression chambers shall be constructed of noncombustible materials. Bedding, etc., shall be chemically treated so as to be fire resistant.

(11) Head frames shall be constructed of structural steel or open frame-work fireproofed timber. Head houses and other temporary surface buildings or structures within 100 feet of the shaft, caisson, or tunnel opening shall be built of fire-resistant materials.

(12) No oil, gasoline, or other combustible material shall be stored within 100 feet of any shaft, caisson, or tunnel opening, except that oils may be stored in suitable tanks in isolated fireproof buildings, provided such buildings are not less than 50 feet from any shaft, caisson, or tunnel opening, or any building directly connected thereto.

(13) Positive means shall be taken to prevent leaking flammable liquids from flowing into the areas specifically mentioned in the preceding paragraph.

(14) All explosives used in connection with compressed air work shall be selected, stored, transported, and used as specified in Subpart U of this part.

(m) *Bulkheads and safety screens.* (1) Intermediate bulkheads with locks, or intermediate safety screens or both, is required where there is the danger of rapid flooding.

(2) In tunnels 16 feet or more in diameter, hanging walkways shall be provided from the face to the man lock as high in the tunnel as practicable, with at least 6 feet of head room. Walkways shall be constructed of noncombustible material. Standard railings shall be securely installed throughout the length of all walkways on open sides in accordance with Subpart N of this part. Where walkways are ramped under safety screens, the walkway surface shall be skidproofed by cleats or by equivalent means.

(3) Bulkheads used to contain compressed air shall be tested, where practicable, to prove their ability to resist the highest air pressure which may be expected to be used.

§ 1518.804 Definitions.

(a) "Bulkhead"—An airtight structure separating the working chamber from free air or from another chamber under a lesser pressure than the woking pressure.

(b) "Caisson"—A wood, steel, concrete or reinforced concrete, air- and watertight chamber in which it is possible for men to work under air pressure greater than atmospheric pressure to excavate material below water level.

(c) "Decanting"—A method used for decompressing under emergency circumstances. In this procedure, the employees are brought to atmospheric pressure with a very high gas tension in the tissues and then immediately recompressed in a second and separate chamber or lock.

(d) "Emergency locks"—A lock designed to hold and permit the quick passage of an entire shift of employees.

(e) "High air"—Air pressure used to supply power to pneumatic tools and devices.

(f) "Low air"—Air supplied to pressurize working chambers and locks.

(g) "Man lock"—A chamber through which men pass from one air pressure environment into another.

(h) "Materials lock"—A chamber through which materials and equipment pass from one air pressure environment into another.

(i) "Medical lock"—A special chamber in which employees are treated for decompression illness. It may also be used

in preemployment physical examinations to determine the adaptability of the prospective employee to changes in pressure.

(j) "Normal condition"—One during which exposure to compressed air is limited to a single continuous working period followed by a single decompression in any given 24-hour period; the total time of exposure to compressed air during the single continuous working period is not interrupted by exposure to normal atmospheric pressure, and a second exposure to compressed air does not occur until at least 12 consecutive hours of exposure to normal atmospheric pressure has elapsed since the employee has been under pressure.

(k) "Pressure"—A force acting on a unit area. Usually shown as pounds per square inch. (p.s.i.)

(l) "Absolute pressure" (p.s.i.a.)—The sum of the atmospheric pressure and gauge pressure (p.s.i.g.).

(m) "Atmospheric pressure"—The pressure of air at sea level, usually 14.7 p.s.i.a. (1 atmosphere), or 0 p.s.i.g.

(n) "Gauge pressure" (p.s.i.g.)—Pressure measured by a gauge and indicating the pressure exceeding atmospheric.

(o) "Safety screen"—An air- and water-tight diaphragm placed across the upper part of a compressed air tunnel between the face and bulkhead, in order to prevent flooding the crown of the tunnel between the safety screen and the bulkhead, thus providing a safe means of refuge and exit from a flooding or flooded tunnel.

(p) "Special decompression chamber"—A chamber to provide greater comfort for employees when the total decompression time exceeds 75 minutes.

(q) "Working chamber"—The space or compartment under air pressure in which the work is being done.

Appendix A

Decompression Tables

1. *Explanation.* The decompression tables are computed for working chamber pressures from 0 to 14 pounds, and from 14 to 50 pounds per square inch gage inclusive by 2-pound increments and for exposure times for each pressure extending from one-half to over 8 hours inclusive. Decompressions will be conducted by two or more stages with a maximum of four stages, the latter for a working chamber pressure of 40 pounds per square inch gage or over.

Stage 1 consists of a reduction in ambient pressure ranging from 10 to a maximum of 16 pounds per square inch, but in no instance will the pressure be reduced below 4 pounds at the end of stage 1. This reduction in pressure in stage 1 will always take place at a rate not greater than 5 pounds per minute.

Further reduction in pressure will take place during stage 2 and subsequent stages as required at a slower rate, but in no event at a rate greater than 1 pound per minute.

Decompression Table No. 1 indicates in the body of the table the total decompression time in minutes for various combinations of working chamber pressure and exposure time.

Decompression Table No. 2 indicates for the same various combinations of working chamber pressure and exposure time the following:

a. The number of stages required;

b. The reduction in pressure and the terminal pressure for each required stage;

c. The time in minutes through which the reduction in pressure is accomplished for each required stage;

d. The pressure reduction rate in minutes per pound for each required stage;

Important Note: The Pressure Reduction in Each Stage is Accomplished at a Uniform Rate. Do Not Interpolate Between Values Shown on the Tables. Use the Next Higher Value of Working Chamber Pressure or Exposure Time Should the Actual Working Chamber Pressure or the Actual Exposure Time, Respectively, Fall Between Those for Which Calculated Values Are Shown in the Body of the Tables.

Examples:

Example No. 1:
4 hours working period at 20 pounds gage.
Decompression Table No. 1:
20 pounds for 4 hours, total decompression time. — 43 minutes.
Decompression Table No. 2:
Stage 1: Reduce pressure from 20 pounds to 4 pounds at the uniform rate of 5 pounds per minute.
Elapsed time stage 1: $\frac{16}{5}$ — 3 minutes.
Stage 2 (final stage): Reduce pressure at a uniform rate from 4 pounds to 0-pound gage over a period of 40 minutes.
Rate—0.10 pound per minute or 10 minutes per pound.
Stage 2 (final) elapsed time. — 40 minutes.
Total time — 43 minutes.

Example No. 2:
5-hour working period at 24 pounds gage.
Decompression Table No. 1:
24 pounds for 5 hours, total decompression time. — 117 minutes.
Decompression Table No. 2:
Stage 1: Reduce pressure from 24 pounds to 8 pounds at the uniform rate of 5 pounds per minute.
Elapsed time stage 1: $\frac{16}{5}$ — 3 minutes.
Stage 2: Reduce pressure at a uniform rate from 8 pounds to 4 pounds over a period of 4 minutes. Rate, 1 pound per minute elapsed time, stage 2. — 4 minutes.
Transfer men to special decompression chamber maintaining the 4-pound pressure during the transfer operation.
Stage 3 (final stage): In the special decompression chamber, reduce the pressure at a uniform rate from 4 pounds to 0-pound gage over a period of 110 minutes. Rate, 0.037 pound per minute or 27.5 minutes per pound. Stage 3 (final) elapsed time. — 110 minutes.
Total time — 117 minutes.

Decompression Table No. 1—Total Decompression Time

Work pressure p.s.i.g.	Working period hours										
	½	1	1½	2	3	4	5	6	7	8	Over 8
0–12	3	3	3	3	3	3	3	3	3	3	3
14	6	6	6	6	6	6	6	6	16	16	32
16	7	7	7	7	7	7	17	33	48	48	63
18	7	7	7	8	11	17	48	63	63	73	87
20	7	7	8	15	15	43	63	73	83	103	113
22	9	9	16	24	38	68	93	103	113	128	133
24	11	12	23	27	52	92	117	122	127	137	151
26	13	14	29	34	69	104	126	141	142	142	163
28	15	23	31	41	98	127	143	153	153	165	183
30	17	28	38	62	105	143	165	168	178	188	204
32	19	35	43	85	126	163	178	193	203	213	226
34	21	39	58	98	151	178	195	218	223	233	248
36	24	44	63	113	170	198	223	233	243	253	273
38	28	49	73	128	178	203	223	238	253	263	278
40	31	49	84	143	183	213	233	248	258	278	288
42	37	56	102	144	189	215	245	260	263	268	293
44	43	64	118	154	199	234	254	264	269	269	293
46	44	74	139	171	214	244	269	274	289	299	318
48	51	89	144	189	229	269	299	309	319	319	----
50	58	94	164	209	249	279	309	329	----	----	----

Decompression Table No. 2

(Do not interpolate, use next higher value for conditions not computed.)

Working chamber pressure P.s.i.g.	Working period Hours	Decompression data					
		Stage No.	Pressure reduction P.s.i.g.		Time in stage Minutes	Pressure reduction rate Min/Pound	Total time decompress Minutes
			From	To			
14	½	1	14	4	2	0.20	6
		2	4	0	4	1.00	6
	1	1	14	4	2	0.20	6
		2	4	0	4	1.00	6
	1½	1	14	4	2	0.20	6
		2	4	0	4	1.00	6
	2	1	14	4	2	0.20	6
		2	4	0	4	1.00	6
	3	1	14	4	2	0.20	6
		2	4	0	4	1.00	6
	4	1	14	0	2	0.20	6
		2	4	0	4	1.00	6
	5	1	14	4	2	0.20	6
		2	4	0	4	1.00	6

Working chamber pressure P.s.i.g.	Working period Hours	Decompression data					
		Stage No.	Pressure reduction P.s.i.g.		Time in stage Minutes	Pressure reduction rate Min/Pound	Total time decompress Minutes
			From	To			
14	6	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	7	1	14	4	2	0.20	
		2	4	0	14	3.50	16
	8	1	14	4	2	0.20	
		2	4	0	14	3.50	16
	Over 8	1	14	4	2	0.20	
		2	4	0	30	7.50	32
16	½	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	1	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	1½	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	2	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	3	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	4	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	5	1	16	4	3	0.20	7
		2	4	0	4	3.50	17
	6	1	16	4	3	0.20	
		2	4	0	30	7.50	33
	7	1	16	4	3	0.20	
		2	4	0	45	11.25	48
	8	1	16	4	3	0.20	
		2	4	0	45	11.25	48
	Over 8	1	16	4	3	0.20	
		2	4	0	60	15.00	63
18	½	1	18	4	3	0.20	
		2	4	0	4	1.00	7
	1	1	18	4	3	0.20	
		2	4	0	4	1.00	7
	1½	1	18	4	3	0.20	
		2	4	0	4	1.00	7
	2	1	18	4	3	0.20	
		2	4	0	5	1.25	8
	3	1	18	4	3	0.20	
		2	4	0	8	2.00	11
	4	1	18	4	3	0.20	
		2	4	0	14	3.50	17
	5	1	18	4	3	0.20	
		2	4	0	45	11.25	48
	6	1	18	4	3	0.20	
		2	4	0	60	15.00	63
	7	1	18	4	3	0.20	
		2	4	0	60	15.00	63
	8	1	18	4	3	0.20	
		2	4	0	70	17.50	73
	Over 8	1	18	4	3	0.20	
		2	4	0	84	21.00	87
20	½	1	20	4	3	0.20	
		2	4	0	4	1.00	7
	1	1	20	4	3	0.20	
		2	4	0	4	1.00	7
	1½	1	20	4	3	0.20	
		2	4	0	5	1.25	8
	2	1	20	4	3	0.20	
		2	4	0	12	3.00	15
	3	1	20	4	3	0.20	
		2	4	0	12	3.00	15
	4	1	20	4	3	0.20	
		2	4	0	40	10.00	43
	5	1	20	4	3	0.20	
		2	4	0	60	15.00	63
	6	1	20	4	3	0.20	
		2	4	0	70	17.50	73
	7	1	20	4	3	0.20	
		2	4	0	80	20.00	83
	8	1	20	4	3	0.20	
		2	4	0	100	25.00	103

Working chamber pressure P.s.i.g.	Working period Hours	Decompression data					
		Stage No.	Pressure reduction P.s.i.g.		Time in stage Minutes	Pressure reduction rate Min/Pound	Total time decompress Minutes
			From	To			
20	Over 8	1	20	4	3	0.20	
		2	4	0	110	27.50	113
22	½	1	22	6	3	0.20	
		2	6	0	6	1.00	9
	1	1	22	6	3	0.20	
		2	6	0	6	1.00	9
	1½	1	22	6	3	0.20	
		2	6	0	13	2.20	16
	2	1	22	6	3	0.20	
		2	6	0	21	3.50	24
	3	1	22	6	3	0.20	
		2	6	0	35	5.85	38
	4	1	22	6	3	0.20	
		2	6	0	65	10.83	68
	5	1	22	6	3	0.20	
		2	6	0	90	15.00	93
	6	1	22	6	3	0.20	
		2	6	0	100	16.67	103
	7	1	22	6	3	0.20	
		2	6	0	110	18.35	113
	8	1	22	6	3	0.20	
		2	6	0	125	20.80	128
	Over 8	1	22	6	3	0.20	
		2	6	0	130	21.70	
24	½	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	4	1.00	11
	1	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	5	1.25	12
	1½	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	16	4.00	23
	2	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	20	5.00	27
	3	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	45	11.00	52
	4	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	85	21.25	92
	5	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	110	27.50	117
	6	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	115	28.80	122
	7	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	120	30.00	127
	8	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	130	32.50	137
	Over 8	1	24	8	3	0.20	
		2	8	4	8	2.00	
		3	4	0	140	35.00	151
26	½	1	24	10	3	0.20	
		2	8	4	6	1.00	
		3	4	0	4	1.00	13
	1	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	5	1.25	14
	1½	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	20	5.00	29
	2	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	25	6.25	34
	3	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	60	15.00	69

Working chamber pressure P.s.i.g.	Working period Hours	Decompression data					
		Stage No.	Pressure reduction P.s.i.g. From	To	Time in stage Minutes	Pressure reduction rate Min/Pound	Total time decompress Minutes
26	4	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	95	23.75	104
	5	1	26	10	3	0.20	
		2	10	4	8	1.33	
		3	4	0	115	28.80	126
	6	1	26	10	3	0.20	
		2	10	4	8	1.33	
		3	4	0	130	32.50	141
	7	1	26	10	3	0.20	
		2	10	4	9	1.50	
		3	4	0	130	32.50	142
	8	1	26	10	3	0.20	
		2	10	4	9	1.50	
		3	4	0	130	32.50	142
	Over 8	1	26	10	3	0.20	
		2	10	4	30	5.00	
		3	4	0	130	32.50	163
28	½	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	4	1.00	15
	1	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	12	3.00	23
	1½	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	20	5.00	31
	2	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	30	7.50	41
	3	1	28	12	3	0.20	
		2	12	4	10	1.25	
		3	4	0	85	21.20	98
	4	1	28	12	3	0.20	
		2	12	4	14	1.75	
		3	4	0	110	27.50	127
	5	1	28	12	3	0.20	
		2	12	4	20	2.50	
		3	4	0	120	30.00	143
	6	1	28	12	3	0.20	
		2	12	4	20	2.50	
		3	4	0	130	32.50	153
	7	1	28	12	3	0.20	
		2	12	4	20	2.50	
		3	4	0	120	32.50	153
	8	1	28	12	3	0.20	
		2	12	4	32	4.00	
		3	4	0	130	32.50	165
	Over 8	1	28	12	3	0.20	
		2	12	4	50	6.25	
		3	4	0	130	32.50	183
30	½	1	30	14	3	0.20	
		2	14	4	10	1.00	
		3	4	0	4	1.00	17
	1	1	30	14	3	0.20	
		2	14	4	10	1.00	
		3	4	0	15	3.75	28
	1½	1	30	14	3	0.20	
		2	14	4	10	1.00	
		3	4	0	25	6.25	38
	2	1	30	14	3	0.20	
		2	14	4	14	1.40	
		3	4	0	45	11.25	62
	3	1	30	14	3	0.20	
		2	14	4	17	1.70	
		3	4	0	85	21.20	105
	4	1	30	14	3	0.20	
		2	14	4	30	3.00	
		3	4	0	110	27.50	143
	5	1	30	14	3	0.20	
		2	14	4	35	3.50	
		3	4	0	130	32.50	165

Working chamber pressure P.s.i.g.	Working period Hours	Decompression data					
		Stage No.	Pressure reduction P.s.i.g. From	To	Time in stage Minutes	Pressure reduction rate Min/Pound	Total time decompress Minutes
30	6	1	30	14	3	0.20	
		2	14	4	35	3.50	
		3	4	0	130	32.50	168
	7	1	30	14	3	0.20	
		2	14	4	45	4.50	
		3	4	0	130	32.50	178
	8	1	30	14	3	0.20	
		2	14	4	55	5.50	
		3	4	0	130	32.50	188
	Over 8	1	30	14	3	0.20	
		2	14	4	71	7.10	
		3	4	0	130	32.50	204
32	½	1	32	16	3	0.20	
		2	16	4	12	1.00	
		3	4	0	4	1.00	19
	1	1	32	16	3	0.20	
		2	16	4	12	1.00	
		3	4	0	20	5.00	35
	1½	1	32	16	3	0.20	
		2	16	4	15	1.25	
		3	4	0	25	6.25	43
	2	1	32	16	3	0.20	
		2	16	4	22	1.83	
		3	4	0	60	15.00	85
	3	1	32	16	3	0.20	
		2	16	4	28	2.33	
		3	4	0	95	23.75	126
	4	1	32	16	3	0.20	
		2	16	4	40	3.33	
		3	4	0	120	30.00	163
	5	1	32	16	3	0.20	
		2	16	4	45	3.75	
		3	4	0	130	32.50	178
	6	1	32	16	3	0.20	
		2	16	4	60	5.00	
		3	4	0	130	32.50	193
	7	1	32	16	3	0.20	
		2	16	4	70	5.83	
		3	4	0	130	32.50	203
	8	1	32	16	3	0.20	
		2	16	4	80	6.67	
		3	4	0	130	32.50	213
	Over 8	1	32	16	3	0.20	
		2	16	4	93	7.75	
		3	4	0	130	32.50	226
34	½	1	34	18	3	0.20	
		2	18	4	14	1.00	
		3	4	0	4	1.00	21
	1	1	34	18	3	0.20	
		2	18	4	14	1.00	
		3	4	0	22	5.50	39
	1½	1	34	18	3	0.20	
		2	18	4	25	1.80	
		3	4	0	30	7.50	58
	2	1	34	18	3	0.20	
		2	18	4	35	2.50	
		3	4	0	60	15.00	98
	3	1	34	18	3	0.20	
		2	18	4	43	3.10	
		3	4	0	105	26.25	151
	4	1	34	18	3	0.20	
		2	18	4	55	3.93	
		3	4	0	120	30.00	178
	5	1	34	18	3	0.20	
		2	18	4	62	4.43	
		3	4	0	130	32.50	195
	6	1	34	18	3	0.20	
		2	18	4	85	6.07	
		3	4	0	130	32.50	218
	7	1	34	18	3	0.20	
		2	18	4	90	6.43	
		3	4	0	130	32.50	223

Working chamber pressure P.s.i.g.	Working period Hours	Decompression data						
		Stage No.	Pressure reduction P.s.i.g.		Time in stage Minutes	Pressure reduction rate Min/Pound	Total time decompress Minutes
			From	To			
34	8	1	34	18	3	0.20	
		2	18	4	100	7.15	
		3	4	0	130	32.50	233
	Over 8	1	34	18	3	0.20	
		2	18	4	115	8.23	
		3	4	0	130	32.50	248
36	½	1	36	20	3	0.20	
		2	20	4	16	1.00	
		3	4	0	5	1.25	24
	1	1	36	20	3	0.20	
		2	20	4	16	1.00	
		3	4	0	25	6.25	44
	1½	1	36	20	3	0.20	
		2	20	4	30	1.88	
		3	4	0	30	7.50	63
	2	1	36	20	3	0.20	
		2	20	4	40	2.50	
		3	4	0	70	17.50	113
	3	1	36	20	3	0.20	
		2	20	4	52	3.25	
		3	4	0	115	28.75	170
	4	1	36	20	3	0.20	
		2	20	4	65	4.06	
		3	4	0	130	32.50	198
	5	1	36	20	3	0.20	
		2	20	4	90	5.63	
		3	4	0	130	32.50	228
	6	1	36	20	3	0.20	
		2	20	4	100	6.25	
		3	4	0	130	32.50	233
	7	1	36	20	3	0.20	
		2	20	4	110	6.88	
		3	4	0	130	32.50	243
	8	1	36	20	3	0.20	
		2	20	4	120	7.50	
		3	4	0	130	32.50	255
	Over 8	1	36	20	3	0.20	
		2	20	4	140	8.75	
		3	4	0	130	32.50	273
38	½	1	38	22	3	0.20	
		2	22	6	16	1.00	
		3	6	0	9	1.50	28
	1	1	38	22	3	0.20	
		2	22	6	16	1.00	
		3	6	0	30	5.00	49
	1½	1	38	22	3	0.20	
		2	22	6	20	1.25	
		3	6	0	50	8.34	73
	2	1	38	22	3	0.20	
		2	22	6	30	1.88	
		3	6	0	95	15.88	128
	3	1	38	22	3	0.20	
		2	22	6	35	2.19	
		3	6	0	140	23.35	178
	4	1	38	22	3	0.20	
		2	22	6	50	3.12	
		3	6	0	150	25.00	203
	5	1	38	22	3	0.20	
		2	22	6	55	3.44	
		3	6	0	165	27.50	223
	6	1	38	22	3	0.20	
		2	22	6	70	4.38	
		3	6	0	165	27.50	238
	7	1	38	22	3	0.20	
		2	22	6	85	5.32	
		3	6	0	165	27.50	253
	8	1	38	22	3	0.20	
		2	22	6	95	5.93	
		3	6	0	165	27.50	268
	Over 8	1	38	22	3	0.20	
		2	22	6	110	6.88	
		3	6	0	165	27.50	278

Working chamber pressure P.s.i.g.	Working period Hours	Decompression data						
		Stage No.	Pressure reduction P.s.i.g.		Time in stage Minutes	Pressure reduction rate Min/Pound	Total time decompress Minutes
			From	To			
40	½	1	40	24	3	0.20	
		2	24	8	16	1.00	
		3	8	4	4	1.00	
		4	4	0	8	2.00	31
	1	1	40	24	3	0.20	
		2	24	8	16	1.00	
		3	8	4	5	1.25	
		4	4	0	25	6.25	49
	1½	1	40	24	3	0.20	
		2	24	8	16	1.00	
		3	8	4	20	5.00	
		4	4	0	45	11.25	84
	2	2	40	24	3	0.20	
		1	24	8	25	1.56	
		3	8	4	20	5.00	
		4	4	0	95	23.75	143
	3	1	40	24	3	0.20	
		2	24	8	30	1.88	
		3	8	4	30	7.50	
		4	4	0	120	30.00	183
	4	1	40	24	3	0.20	
		2	24	8	45	2.81	
		3	8	4	35	8.75	
		4	4	0	130	32.50	213
	5	1	40	24	3	0.20	
		2	24	8	47	2.94	
		3	8	4	53	13.25	
		4	4	0	130	32.50	238
	6	1	40	24	3	0.20	
		2	24	8	55	3.44	
		3	8	4	60	15.00	
		4	4	0	130	32.50	248
	7	1	40	24	3	0.20	
		2	24	8	65	4.06	
		3	8	4	60	15.00	
		4	4	0	130	32.50	258
	8	1	40	24	3	0.20	
		2	24	8	75	4.70	
		3	8	4	60	15.00	
		4	4	0	130	32.50	268
	Over 8	1	40	24	3	0.20	
		2	24	8	95	5.93	
		3	8	4	60	15.00	
		4	4	0	130	32.50	288
42	½	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	6	1.00	
		4	4	0	12	3.00	37
	1	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	12	2.00	
		4	4	0	35	6.25	36
	1½	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	28	3.33	
		4	4	0	60	15.00	102
	2	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	30	5.00	
		4	4	0	95	23.75	144
	3	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	50	8.34	
		4	4	0	120	30.00	189
	4	1	42	26	3	0.20	
		2	26	10	17	1.06	
		3	10	4	65	10.83	
		4	4	0	130	32.50	215
	5	1	42	26	3	0.20	
		2	26	10	27	1.69	
		3	10	4	85	14.18	
		4	4	0	130	32.50	245

Working chamber pressure P.s.i.g.	Working period Hours	Decompression data					
		Stage No.	Pressure reduction P.s.i.g. From	To	Time in stage Minutes	Pressure reduction rate Min/Pound	Total time decompress Minutes
42	6	1	42	26	3	0.20	
		2	26	10	27	1.69	
		3	10	4	100	16.67	
		4	4	0	130	32.50	260
	7	1	42	26	3	0.20	
		2	26	10	30	1.88	
		3	10	4	100	16.67	
		4	4	0	130	32.50	268
	8	1	42	26	3	0.20	
		2	26	10	35	2.19	
		3	10	4	100	16.67	
		4	4	0	130	32.50	268
	Over 8	1	42	26	3	0.20	
		2	26	10	60	3.75	
		3	10	4	100	16.67	
		4	4	0	130	32.50	293
44	½	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	8	1.00	
		4	4	0	16	4.00	43
	1	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	20	2.50	
		4	4	0	25	6.25	64
	1½	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	27	3.38	
		4	4	0	72	18.00	118
	2	1	44	28	2	0.20	
		2	28	12	16	1.00	
		3	12	4	40	5.00	
		4	4	0	95	28.75	154
	3	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	60	7.50	
		4	4	0	120	30.00	199
	4	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	85	10.62	
		4	4	0	130	32.50	284
	5	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	105	13.13	
		4	4	0	130	32.50	254
	6	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	115	14.38	
		4	4	0	130	32.50	64
	7	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	120	15.00	
		4	4	0	130	32.50	269
	8	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	120	15.00	
		4	4	0	130	32.50	269
	Over 8	1	44	28	3	0.20	
		2	28	12	40	2.50	
		3	12	4	120	15.00	
		4	4	0	130	32.50	293
46	½	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	10	1.00	
		4	4	0	15	3.75	44
	1	1	46	30	2	0.20	
		2	30	14	16	1.00	
		3	14	4	25	2.50	
		4	4	0	30	7.50	74
	1½	1	46	30	2	0.20	
		2	30	14	16	1.00	
		3	14	4	35	3.50	
		4	4	0	85	21.20	129

Working chamber pressure P.s.i.g.	Working period Hours	Decompression data					
		Stage No.	Pressure reduction P.s.i.g. From	To	Time in stage Minutes	Pressure reduction rate Min/Pound	Total time decompress Minutes
46	2	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	47	4.70	
		4	4	0	105	26.25	171
	3	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	65	6.50	
		4	4	0	130	32.50	214
	4	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	95	9.50	
		4	4	0	130	32.50	244
	5	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	120	12.00	
		4	4	0	130	32.50	269
	6	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	125	12.50	
		4	4	0	130	32.50	274
	7	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	140	14.00	
		4	4	0	130	32.50	289
	8	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	150	15.00	
		4	4	0	130	32.50	299
	Over 8	1	46	30	3	0.20	
		2	30	14	25	1.56	
		3	14	4	160	16.00	
		4	4	0	130	32.50	313
48	½	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	12	1.00	
		4	4	0	20	5.00	51
	1	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	35	2.92	
		4	4	0	35	8.75	89
	1½	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	45	3.75	
		4	4	0	80	20.00	144
	2	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	60	5.00	
		4	4	0	110	27.50	189
	3	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	90	7.50	
		4	4	0	120	30.00	229
	4	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	120	10.00	
		4	4	0	130	32.50	269
	5	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	140	11.67	
		4	4	0	130	32.50	299
	6	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	160	13.33	
		4	4	0	130	32.50	309
	7	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	170	14.17	
		4	4	0	130	32.50	319
	8	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	170	14.17	
		4	4	0	130	32.50	319

Working chamber pressure P.s.i.g.	Working period Hours	Decompression data: Stage No.	Pressure reduction P.s.i.g. From	To	Time in stage Minutes	Pressure reduction rate Min/Pound	Total time decompress Minutes
50	½	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	14	1.00	
		4	4	0	25	6.25	58
	1	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	40	2.86	
		4	4	0	35	8.75	94
	1½	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	55	3.93	
		4	4	0	90	22.50	164
	2	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	70	5.00	
		4	4	0	120	30.00	209
	3	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	100	7.15	
		4	4	0	130	32.50	249
	4	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	130	8.58	
		4	4	0	130	32.50	279
	5	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	160	11.42	
		4	4	0	130	32.50	309
	6	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	180	12.85	
		4	4	0	130	32.50	329

Subpart T—Demolition

§ 1518.850 Preparatory operations.

(a) Prior to permitting employees to start demolition operations, a engineering survey shall be made, by a competent person, of the structure to determine the condition of the framing, floors, and walls, and possibility of unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed shall also be similarly checked. The employer shall have in writing, evidence that such a survey has been performed.

(b) When employees are required to work within a structure to be demolished which has been damaged by fire, flood, explosion, or other cause, the walls shall be shored or braced.

(c) All electric, gas, water, steam, sewer, and other service lines shall be shut off, capped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company which is involved shall be notified in advance.

(d) If it is necessary to maintain any power, water or other utilities during demolition, such lines shall be temporarily relocated, as necessary, and protected.

(e) It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started.

(f) Where a hazard exists from fragmentation of glass, such hazards shall be removed.

(g) Where a hazard exists to employees falling through wall openings, the opening shall be protected to a height of approximately 42 inches.

(h) When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped shall be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs, warning of the hazard of falling materials, shall be posted at each level. Removal shall not be permitted in this lower area until debris handling ceases above.

(i) All floor openings, not used as material drops, shall be covered over with material substantial enough to support the weight of any workers who may step upon them. Such material shall be properly secured to prevent its accidental movement.

(j) Except for the cutting of holes in floors for chutes, holes through which to drop materials, preparation of storage space, and similar necessary preparatory work, the demolition of exterior walls and floor construction shall begin at the top of the structure and proceed downward. Each story of exterior wall and floor construction shall be removed and dropped into the storage space before commencing the removal of exterior walls and floors in the story next below.

(k) Employee entrances to multistory structures being demolished shall be completely protected by sidewalk sheds or canopies, or both, providing protection from the face of the building for a minimum of 8 feet. All such canopies shall be at least 2 feet wider than the building entrances or openings (1 foot wider on each side thereof), and shall be capable of sustaining a load of 150 pounds per square foot.

§ 1518.851 Stairs, passageways, and ladders.

(a) Only those stairways, passageways, and ladders, designated as means of access to the structure of building, shall be used. Other access ways shall be entirely closed off at all times.

(b) All stairs, passageways, ladders and incidental equipment thereto, which are covered by this section, shall be periodically inspected and maintained in a clean safe condition.

(c) In a multistory building, when a stairwell is being used, it shall be properly illuminated by either natural or artificial means, and completely and substantially covered over at a point not less than two floors below the floor on which work is being performed, and access to the floor where the work is in progress shall be through a properly lighted, protected, and separate passageway.

§ 1518.852 Chutes.

(a) No material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effectively protected.

(b) All materials chutes, or sections thereof, at an angle of more than 45° from the horizontal, shall be entirely enclosed, except for openings equipped with closures at or about floor level for the insertion of materials. The openings shall not exceed 48 inches in height measured along the wall of the chute. At all stories below the top floor, such openings shall be kept closed when not in use.

(c) A substantial gate shall be installed in each chute at or near the discharge end. A competent employee shall be assigned to control the operation of the gate, and the backing and loading of trucks.

(d) When operations are not in progress, the area surrounding the discharge end of a chute shall be securely closed off.

(e) Any chute opening, into which workmen dump debris, shall be protected by a substantial guardrail approximately 42 inches above the floor or other surface on which the men stand to dump the material. Any space between the chute and the edge of openings in the floors through which it passes shall be solidly covered over.

(f) Where the material is dumped from wheelbarrows, a securely attached toeboard or bumper, not less than 4 inches thick and 6 inches high, shall be provided at each chute opening.

(g) Chutes shall be designed and constructed of such strength as to eliminate failure due to impact of materials or debris loaded therein.

§ 1518.853 Removal of materials through floor holes.

Any openings cut in a floor for the disposal of materials shall be no larger in size than 25 percent of the aggregate of the total floor area, unless the lateral supports of the removed flooring remain in place. Floors weakened or otherwise made unsafe by demolition opera-

tions shall be shored to carry safely the intended imposed load from demolition operations.

§ 1518.854 Removal of walls, masonry sections, and chimneys.

(a) Masonry walls, or other sections of masonry, shall not be permitted to fall upon the floors of the building in such masses as to exceed the safe carrying capacities of the floors.

(b) No wall section, which is more than one story in height, shall be permitted to stand alone without lateral bracing, unless such wall was originally designed and constructed to stand without such lateral support, and is in a condition safe enough to be self-supporting. All walls shall be left in a stable condition at the end of each shift.

(c) Employees shall not be permitted to work on the top of a wall when weather conditions constitute a hazard.

(d) Structural or load-supporting members on any floor shall not be cut or removed until all stories above such a floor have been demolished and removed. This provision shall not prohibit the cutting of floor beams for the disposal of materials or for the installation of equipment, provided that the requirements of §§ 1518.853 and 1518.855 are met.

(e) Floor openings within 10 feet of any wall being demolished shall be planked solid, except when employees are kept out of the area below.

(f) In buildings of "skeleton-steel" construction, the steel framing may be left in place during the demolition of masonry. Where this is done, all steel beams, girders, and similar structural supports shall be cleared of all loose material as the masonry demolition progresses downward.

(g) Walkways shall be provided to enable employees to safely reach or leave any scaffold or wall.

(h) Walls, which serve as retaining walls to support earth or adjoining structures, shall not be demolished until such earth has been properly braced or adjoining structures have been properly underpinned.

(i) Walls, which are to serve as retaining walls against which debris will be piled, shall not be so used unless capable of safely supporting the imposed load.

§ 1518.855 Manual removal of floors.

(a) Openings cut in a floor shall extend the full span of the arch between supports.

(b) Before demolishing any floor arch, debris and other material shall be removed from such arch and other adjacent floor area. Planks not less than 2 inches by 10 inches in cross section, full size undressed, shall be provided for, and shall be used by employees to stand on while breaking down floor arches between beams. Such planks shall be so located as to provide a safe support for the workmen should the arch between the beams collapse. The open space between planks shall not exceed 16 inches.

(c) Safe walkways, not less than 20 inches wide, formed of planks not less than 2 inches thick if wood, or of equivalent strength if metal, shall be provided and used by workmen when necessary to enable them to reach any point without walking upon exposed beams.

(d) Stringers of ample strength shall be installed to support the flooring planks, and the ends of such stringers shall be supported by floor beams or girders, and not by floor arches alone.

(e) Planks shall be laid together over solid bearings with the ends overlapping at least 1 foot.

(f) When floor arches are being removed, employees shall not be allowed in the area directly underneath, and such an area shall be barricaded to prevent access to it.

(g) Demolition of floor arches shall not be started until they, and the surrounding floor area for a distance of 20 feet, have been cleared of debris and any other unnecessary materials.

§ 1518.856 Removal of walls, floors, and material with equipment.

(a) Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are of sufficient strength to support the imposed load.

(b) Floor openings shall have curbs or stop-logs to prevent equipment from running over the edge.

(c) Mechanical equipment used shall meet the requirements specified in Subparts N and O of this part.

§ 1518.857 Storage.

(a) The storage of waste material and debris on any floor shall not exceed the allowable floor loads.

(b) In buildings having wooden floor construction, the flooring boards may be removed from not more than one floor above grade to provide storage space for debris, provided falling material is not permitted to endanger the stability of the structure.

(c) When wood floor beams serve to brace interior walls or free-standing exterior walls, such beams shall be left in place until other equivalent support can be installed to replace them.

(d) Floor arches, to an elevation of not more than 25 feet above grade, may be removed to provide storage area for debris: *Provided*, That such removal does not endanger the stability of the structure.

(e) Storage space into which material is dumped shall be blocked off, except for openings necessary for the removal of material. Such openings shall be kept closed at all times when material is not being removed.

§ 1518.858 Removal of steel construction.

(a) When floor arches have been removed, planking in accordance with § 1518.855(b) shall be provided for the workers engaged in razing the steel framing.

(b) Cranes, derricks, and other hoisting equipment used shall meet the requirements specified in Subpart N of this part.

(c) Steel construction shall be dismantled column length by column length, and tier by tier (columns may be in two-story lengths).

(d) Any structural member being dismembered shall not be overstressed.

§ 1518.859 Mechanical demolition.

(a) No workers shall be permitted in any area, which can be adversely affected by demolition operations, when balling or clamming is being performed. Only those workers necessary for the performance of the operations shall be permitted in this area at any other time.

(b) The weight of the demolition ball shall not exceed 50 percent of the crane's rated load, based on the length of the boom and the maximum angle of operation at which the demolition ball will be used, or it shall not exceed 25 percent of the nominal breaking strength of the line by which it is suspended, whichever results in a lesser value.

(c) The crane boom and loadline shall be as short as possible.

(d) The ball shall be attached to the loadline with a swivel-type connection to prevent twisting of the loadline, and shall be attached by positive means in such manner that the weight cannot become accidentally disconnected.

(e) When pulling over walls or portions thereof with a demolition ball or clamshell bucket, or by attachment of a rope, all steel members affected shall have been previously cut free.

(f) All roof cornices or other such ornamental stonework shall be removed prior to pulling walls over.

(g) During demolition, continuing inspections shall be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, or walls, or loosened material. No workman shall be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other effective means.

Subpart U—Blasting and the Use of Explosives

§ 1518.900 General provisions.

(a) The employer shall permit only authorized and qualified persons to handle and use explosives.

(b) Smoking, firearms, matches, open flame lamps, and other fires, flame or heat producing devices and sparks shall be prohibited in or near explosive magazines or while explosives are being handled, transported or used.

(c) No person shall be allowed to handle or use explosives while under the influence of intoxicating liquors, narcotics, or other dangerous drugs.

(d) All explosives shall be accounted for at all times. Explosives not being used shall be kept in a locked magazine, unavailable to persons not authorized to handle them. The employer shall maintain an inventory and use record of all explosives. Appropriate authorities shall be notified of any loss, theft, or unauthorized entry into a magazine.

(e) No explosives or blasting agents shall be abandoned.

(f) No fire shall be fought that has come in contact with explosives. All em-

ployees shall be removed to a safe area and the fire area guarded against intruders.

(g) Original containers, or Class II magazines, shall be used for taking detonators and other explosives from storage magazines to the blasting area.

(h) When blasting is done in congested areas or in proximity to a structure, railway, or highway, or any other installation that may be damaged, the blaster shall take special precautions in the loading, delaying, initiation, and confinement of each blast with mats or other methods so as to control the throw of fragments, and thus prevent bodily injury to employees.

(i) Employees authorized to prepare explosive charges or conduct blasting operations shall use every reasonable precaution including, but not limited to, visual and audible warning signals, flags, or barricades, to ensure employee safety.

(j) Insofar as possible, blasting operations above ground shall be conducted during daylight hours.

(k) Due precautions shall be taken to prevent accidental discharge of electric blasting caps from current induced by radar, radio transmitters, lightning, adjacent powerlines, dust storms, or other sources of extraneous electricity. These precautions shall include:

(1) The suspension of all blasting operations and removal of persons from the blasting area during the approach and progress of an electric storm;

(2) The posting of signs warning against the use of mobile radio transmitters on all roads within 350 feet of the blasting operations. Lettering shall not be less than 4 inches in height on a contrasting background;

(3) Ensuring that mobile radio transmitters which are less than 100 feet away from electric blasting caps, in other than original containers, shall be de-energized and effectively locked;

(4) Compliance with the recommendations of The Institute of the Makers of Explosives with regard to blasting in the vicinity of radio transmitters as stipulated in Radio Frequency Energy—A Potential Hazard in the Use of Electric Blasting Caps, IME Publication No. 20, March 1968.

(l) Empty boxes and paper and fiber packing materials, which have previously contained high explosives, shall not be used again for any purpose, but shall be destroyed by burning at an approved location.

(m) Explosives, blasting agents, and blasting supplies that are obviously deteriorated or damaged shall not be used.

(n) Delivery and issue of explosives shall only be made by and to authorized persons and into authorized magazines or approved temporary storage or handling areas.

§ 1518.901 Blaster qualifications.

(a) A blaster shall be able to understand and give written and oral orders.

(b) A blaster shall be in good physical condition and not be addicted to narcotics, intoxicants, or similar types of drugs.

(c) A blaster shall be qualified, by reason of training, knowledge, or experience, in the field of transporting, storing, handling, and use of explosives, and have a working knowledge of State and local laws and regulations which pertain to explosives.

(d) Blasters shall be required to furnish satisfactory evidence of competency in handling explosives and performing in a safe manner the type of blasting that will be required.

(e) The blaster shall be knowledgeable and competent in the use of each type of blasting method used.

§ 1518.902 Surface transportation of explosives.

(a) Explosives shall be transported in full compliance with Federal, State, and local laws and regulations.

(b) Motor vehicles or conveyances transporting explosives shall only be driven by, and be in the charge of, a licensed driver who is physically fit. He shall be familiar with the local, State, and Federal regulation governing the transportation of explosives.

(c) No person shall smoke, or carry matches or any other flame-producing device, nor shall firearms or loaded cartridges be carried while in or near a motor vehicle or conveyance transporting explosives.

(d) Explosives, blasting agents, and blasting supplies shall not be transported with other materials or cargoes. Blasting caps (including electric) shall not be transported in the same vehicle with other explosives.

(e) Vehicles used for transporting explosives shall be strong enough to carry the load without difficulty, and shall be in good mechanical condition.

(f) When explosives are transported by a vehicle with an open body, a Class II magazine or original manufacturer's container shall be securely mounted on the bed to contain the cargo.

(g) All vehicles used for the transportation of explosives shall have tight floors and any exposed spark-producing metal on the inside of the body shall be covered with wood, or other nonsparking material, to prevent contact with containers of explosives.

(h) Every motor vehicle or conveyance used for transporting explosives shall be marked or placarded on both sides, the front, and the rear with the word "Explosives" in red letters, not less than 4 inches in height, on white background. In addition to such marking or placarding, the motor vehicle or conveyance may display, in such a manner that it will be readily visible from all directions, a red flag 18 inches by 30 inches, with the word "Explosives" painted, stamped, or sewed thereon, in white letters, at least 6 inches in height.

(i) Every motor vehicle or conveyance used for transporting explosives shall be equipped with a minimum of two approved extinguishers, each having a rating of at least 10–BC.

(j) Motor vehicles or conveyances carrying explosives, blasting agents, or blasting supplies, shall not be taken inside a garage or shop for repairs or servicing.

(k) No motor vehicle transporting explosives shall be left unattended.

§ 1518.903 Underground transportation of explosives.

(a) All explosives or blasting agents in transit underground shall be taken to the place of use or storage without delay.

(b) The quantity of explosives or blasting agents taken to an underground working place shall not exceed the amount estimated to be necessary for the blast.

(c) Explosives in transit shall not be left unattended.

(d) The hoist operator shall be notified before explosives or blasting agents are transported in a shaft conveyance.

(e) Explosives and blasting agents shall be hoisted, lowered, or conveyed in a powder car. No other materials, supplies, or equipment shall be transported in the same conveyance at the same time.

(f) No one, except the operator, his helper, and the powderman, shall be permitted to ride on a conveyance transporting explosives and blasting agents.

(g) No person shall ride in any shaft conveyance transporting explosives and blasting agents.

(h) No explosives or blasting agents shall be transported on any locomotive. At least two car lengths shall separate the locomotive from the powder car.

(i) No explosives or blasting agents shall be transported on a man haul trip.

(j) The car or conveyance containing explosives or blasting agents shall be pulled, not pushed, whenever possible.

(k) The powder car or conveyance especially built for the purpose of transporting explosives or blasting agents shall bear a sign on each side with the word "Explosives" in letters, not less than 4 inches in height; upon a background of sharply contrasting color.

(l) Compartments for transporting detonators and explosives in the same car or conveyance shall be physically separated by a distance of 24 inches or by a solid partition at least 6 inches thick.

(m) Detonators and other explosives shall not be transported at the same time in any shaft conveyance.

(n) Explosives, blasting agents, or blasting supplies shall not be transported with other materials.

(o) Explosives or blasting agents, not in original containers, shall be placed in a suitable container when transported manually.

(p) Detonators, primers, and other explosives shall be carried in separate containers when transported manually.

§ 1518.904 Storage of explosives and blasting agents.

(a) All explosives shall be stored in approved magazines. Specifications for construction of magazines shall conform to ANSI A10.7–1970, sections 5.3 and 5.4.

(b) Blasting caps, electric blasting caps, detonating primers, and primed

cartridges shall not be stored in the same magazine with other explosives or blasting agents.

(c) Detonating cord shall be stored in Class I or Class II magazines with explosives or blasting agents. Detonating cord shall not be stored with detonators unless the magazine is bullet-resistant. Detonating cord delay connectors shall be stored with detonators only.

(d) The ground around magazines shall slope away for drainage. The land surrounding magazines shall be kept clear or all combustible materials for a distance of at least 25 feet.

(e) Smoking and open flames shall not be permitted within 50 feet of explosives and detonator storage magazine.

(f) Class I and Class II surface magazines shall be located away from inhabited buildings, passenger railways, public highways and other magazines in conformity with ANSI 10.7–1970, Safety Requirements for Transportation, Storage, Handling, and Use of Commercial Explosives and Blasting Agents in the Construction Industry, paragraph 5.1.9.

(g) The use of Class II magazines for the temporary storage of larger quantities of explosives or blasting agents at surface or underground blasting sites shall be by the authorization of the contractor or his authorized representative.

(h) A distance of at least 150 feet shall be maintained between Class II magazines and the work in progress.

(i) No explosives or blasting agents shall be permanently stored in any underground operation until the operation has been developed to the point where at least two modes of exit have been provided.

(j) Permanent underground storage magazines shall be at least 300 feet from any shaft, adit, or active underground working area.

(k) Permanent underground magazines containing detonators shall not be located closer than 50 feet to any magazine containing other explosives or blasting agents.

§ 1518.905 Storage within magazines.

(a) Packages of explosives shall be laid flat with top side up. Corresponding grades and brands shall be stored together in such a manner that brands and grade marks show. All stocks shall be stored to be easily counted and checked. Packages of explosives shall be piled in a stable manner.

(b) Packages of explosives shall not be opened, unpacked, or repacked inside of or within 50 feet of a magazine, or in close proximity to other explosives. Tools used for opening packages of explosives shall be constructed of nonsparking materials, except that metal slitters may be used for opening fiberboard boxes. A wood wedge and a fiber, rubber, or wood mallet, shall be used for opening or closing wood packages of explosives. Opened packages of explosives shall be closed before being returned to a magazine.

(c) Only explosives and blasting agents shall be stored in magazines.

(d) Magazine floors shall be regularly swept and kept clean, dry, and free of grit, paper, empty used packages, and rubbish. Brooms and other cleaning utensils shall not have any spark-producing metal parts. Sweepings shall be removed from floors of magazines and destroyed.

(e) When any explosive has deteriorated to an extent that it is in an unstable or dangerous condition, or if nitroglycerin leaks from any explosive, the person in possession of such explosive shall immediately report the fact to the contractor or his authorized representative. Only experienced persons shall do the work of destroying explosives.

(f) When magazines need inside repairs, all explosives shall be removed therefrom and the floors cleaned. In making outside repairs, if there is a possibility of causing sparks or fire, the explosives shall be removed from the magazine. Explosives removed from a magazine under repair shall be either placed in another magazine, or placed a safe distance from the magazine, where they shall be properly guarded and protected until repairs have been completed, when they shall be returned to the magazine.

§ 1518.906 Loading of explosives or blasting agents.

(a) Procedures that permit safe and efficient loading shall be established before loading is started.

(b) All drill holes shall be sufficiently large to admit freely the insertion of the cartridges of explosives.

(c) Tamping shall be done only with wood rods without exposed metal parts, but nonsparking metal connectors may be used for jointed poles. Violent tamping shall be avoided. The primer shall never be tamped.

(d) No holes shall be loaded except those to be fired in the next round of blasting. After loading, all remaining explosives and detonators shall be immediately returned to an authorized magazine.

(e) Drilling shall not be started until all remaining butts of old holes are examined for unexploded charges, and if any are found, they shall be refired before work proceeds.

(f) No person shall be allowed to deepen drill holes which have contained explosives or blasting agents.

(g) No explosives or blasting agents shall be left unattended at the blast site.

(h) Machines and all tools not used for loading explosives into bore holes shall be removed from the immediate location of holes before explosives are delivered.

(i) No activity of any nature other than that which is required for loading holes with explosives shall be permitted in a blast area.

(j) Powerlines and portable electric cables for equipment being used shall be kept a safe distance from explosives or blasting agents being loaded into drill holes. Cables in the proximity of the blast area shall be deenergized and locked out by the blaster.

(k) Holes shall be checked prior to loading to determine depth and conditions.

(l) When loading a long line of holes with more than one loading crew, the crews shall be separated by practical distance consistent with efficient operation and supervision of crews.

(m) No explosive shall be loaded or used underground in the presence of combustible gases or combustible dusts.

(n) No explosives other than those in Fume Class 1, as set forth by the Institute of Makers of Explosives, shall be used; however, explosives complying with the requirements of Fume Class 2 and Fume Class 3 may be used if adequate ventilation has been provided.

(o) All blast holes in open work shall be stemmed to the collar or to a point which will confine the charge.

(p) Warning signs, indicating a blast area, shall be maintained at all approaches to the blast area. The warning sign lettering shall not be less than 4 inches in height on a contrasting background.

(q) A bore hole shall never be sprung when it is adjacent to or near a hole that is loaded.

(r) Drill holes which have been sprung or chambered, and which are not water-filled, shall be allowed to cool before explosives are loaded.

(s) No loaded holes shall be left unattended or unprotected.

(t) The blaster shall keep an accurate, up-to-date record of explosives, blasting agents, and blasting supplies used in a blast and shall keep an accurate running inventory of all explosives and blasting agents stored on the operation.

§ 1518.907 Initiation of explosive charges—electric blasting.

(a) Electric blasting caps shall not be used where sources of extraneous electricity make the use of electric blasting caps dangerous. Blasting cap leg wires shall be kept short-circuited (shunted) until they are connected into the circuit for firing.

(b) Before adopting any system of electrical firing, the blaster shall conduct a thorough survey for extraneous currents, and all dangerous currents shall be eliminated before any holes are loaded.

(c) In any single blast using electric blasting caps, all caps shall be of the same style or function, and of the same manufacture.

(d) Electric blasting shall be carried out by using blasting circuits or power circuits in accordance with the electric blasting cap manufacturer's recommendations, or an approved contractor or his designated representative.

(e) When firing a circuit of electric blasting caps, care must be exercised to ensure that an adequate quantity of delivered current is available, in accordance with the manufacturer's recommendations.

(f) Connecting wires and lead wires shall be insulated single solid wires of sufficient current-carrying capacity.

(g) Bus wires shall be solid single wires of sufficient current-carrying capacity.

(h) When firing electrically, the insulation on all firing lines shall be adequate and in good condition.

(i) A power circuit used for firing electric blasting caps shall not be grounded.

(j) In underground operations when firing from a power circuit, a safety switch shall be placed in the permanent firing line at intervals. This switch shall be made so it can be locked only in the "Off" position and shall be provided with a short-circuiting arrangement of the firing lines to the cap circuit.

(k) In underground operations there shall be a "lightning" gap of at least 5 feet in the firing system ahead of the main firing switch; that is, between this switch and the source of power. This gap shall be bridged by a flexible jumper cord just before firing the blast.

(l) When firing from a power circuit, the firing switch shall be locked in the open or "Off" position at all times, except when firing. It shall be so designed that the firing lines to the cap circuit are automatically short-circuited when the switch is in the "Off" position. Keys to this switch shall be entrusted only to the blaster.

(m) Blasting machines shall be in good condition and the efficiency of the machine shall be tested periodically to make certain that it can deliver power at its rated capacity.

(n) When firing with blasting machines, the connections shall be made as recommended by the manufacturer of the electric blasting caps used.

(o) The number of electric blasting caps connected to a blasting machine shall not be in excess of its rated capacity. Furthermore, in primary blasting, a series circuit shall contain no more caps than the limits recommended by the manufacturer of the electric blasting caps in use.

(p) All blasting machines shall be in charge of the blaster, and no other person shall connect the leading wires to the machine.

(q) Blasters, when testing circuits to charged holes, shall use only blasting galvanometers equipped with a silver chloride cell especially designed for this purpose.

(r) Whenever the possibility exists that a leading line or blasting wire might be thrown over a live powerline by the force of an explosion, care shall be taken to see that the total length of wires are kept too short to hit the lines, or that the wires are securely anchored to the ground. If neither of these requirements can be satisfied, a nonelectric system shall be used.

(s) In electrical firing, only the man making leading wire connections shall fire the shot. All connections shall be made from the bore hole back to the source of firing current, and the leading wires shall remain shorted and not be connected to the blasting machine or other source of current until the charge is to be fired.

(t) After firing an electric blast from a blasting machine, the leading wires shall be immediately disconnected from the machine and short-circuited.

§ 1518.908 Use of safety fuse.

(a) The use of a fuse that has been hammered or injured in any way is forbidden.

(b) The hanging of fuse on nails or other projections which will cause a sharp bend to be formed in the fuse is prohibited.

(c) Before capping safety fuse, a short length shall be cut from the end of the supply reel so as to assure a fresh cut end in each blasting cap.

(d) Only a cap crimper of approved design shall be used for attaching blasting caps to safety fuse. Crimpers shall be kept in good repair and accessible for use.

(e) No unused cap or short capped fuse shall be placed in any hole to be blasted; such unused detonators shall be removed from the working place and destroyed.

(f) No fuse shall be capped, or primers made up, in any magazine or near any possible source of ignition.

(g) No one shall be permitted to carry detonators or primers of any kind on his person.

(h) The minimum length of safety fuse to be used in blasting shall be as required by State law, but shall not be less than 30 inches.

(i) At least two men shall be present when multiple cap and fuse blasting is done by hand lighting methods.

(j) Not more than 12 fuses shall be lighted by each blaster when hand lighting devices are used. However, when two or more safety fuses in a group are lighted as one by means of igniter cord, or other similar fuse-lighting devices, they may be considered as one fuse.

(k) The so-called "drop fuse" method of dropping or pushing a primer or any explosive with a lighted fuse attached is forbidden.

(l) Cap and fuse shall not be used for firing mudcap charges unless charges are separated sufficiently to prevent one charge from dislodging other shots in the blast.

(m) When blasting with safety fuses, consideration shall be given to the length and burning rate of the fuse. Sufficient time, with a margin of safety, shall always be provided for the blaster to reach a place of safety.

§ 1518.909 Use of detonating cord.

(a) Care shall be taken to select a detonating cord consistent with the type and physical condition of the bore hole and stemming and the type of explosives used.

(b) Detonating cord shall be handled and used with the same respect and care given other explosives.

(c) The line of detonating cord extending out of a bore hole or from a charge shall be cut from the supply spool before loading the remainder of the bore hole or placing additional charges.

(d) Detonating cord shall be handled and used with care to avoid damaging or severing the cord during and after loading and hooking-up.

(e) Detonating cord connections shall be competent and positive in accordance with approved and recommended methods. Knot-type or other cord-to-cord connections shall be made only with detonating cord in which the explosive core is dry.

(f) All detonating cord trunklines and branchlines shall be free of loops, sharp kinks, or angles that direct the cord back toward the oncoming line of detonation.

(g) All detonating cord connections shall be inspected before firing the blast.

(h) When detonating cord millisecond-delay connectors or short-interval-delay electric blasting caps are used with detonating cord, the practice shall conform strictly to the manufacturer's recommendations.

(i) When connecting a blasting cap or an electric blasting cap to detonating cord, the cap shall be taped or otherwise attached securely along the side or the end of the detonating cord, with the end of the cap containing the explosive charge pointed in the direction in which the detonation is to proceed.

(j) Detonators for firing the trunkline shall not be brought to the loading area nor attached to the detonating cord until everything else is in readiness for the blast.

§ 1518.910 Firing the blast.

(a) A code of blasting signals equivalent to Table U–1, shall be posted on one or more conspicuous places at the operation, and all employees shall be required to familiarize themselves with the code and conform to it. Danger signs shall be placed at suitable locations.

(b) Before a blast is fired, a loud warning signal shall be given by the blaster in charge, who has made certain that all surplus explosives are in a safe place and all employees, vehicles, and equipment are at a safe distance, or under sufficient cover.

(c) Flagmen shall be safely stationed on highways which pass through the danger zone so as to stop traffic during blasting operations.

(d) It shall be the duty of the blaster to fix the time of blasting.

(e) Before firing an underground blast, warning shall be given, and all possible entries into the blasting area, and any entrances to any working place where a drift, raise, or other opening is about to hole through, shall be carefully guarded. The blaster shall make sure that all employees are out of the blast area before firing a blast.

TABLE U–1

WARNING SIGNAL—A one-minute series of long blasts 5 minutes prior to blast signal.
BLAST SIGNAL—A series of short blasts 1 minute prior to the shot.
ALL CLEAR SIGNAL—A prolonged blast following the inspection of blast area.

§ 1518.911 Inspection after blasting.

(a) Immediately after the blast has been fired, the firing line shall be disconnected from the blasting machine, or

where power switches are used, they shall be locked open.

(b) Sufficient time shall be allowed for the smoke and fumes to leave the blasted area before returning to the shot. An inspection of the area and the surrounding rubble shall be made by the blaster to determine if all charges have been exploded before employees are allowed to return to the operation.

(c) No one shall be allowed to return to the area of the blast until an "all clear" signal is given.

(d) Loose pieces of rock and other debris shall be scaled down from the sides of the face of excavation and the area made safe before proceeding with the work.

§ 1518.912 Misfires.

(a) A blaster shall conduct all blast- shall provide proper safeguards for excluding all employees from the danger zone.

(b) No other work shall be done except that necessary to remove the hazard of the misfire and only those employees necessary to do the work shall remain in the danger zone.

(c) No attempt shall be made to extract explosives from any charged or misfired hole; a new primer shall be put in and the hole reblasted. If refiring of the misfired hole presents a hazard, the explosives may be removed by washing out with water or, where the misfire is under water, blown out with air.

(d) If there are any misfires while using cap and fuse, all employees shall remain away from the charge for at least 1 hour. Misfires shall be handled under the direction of the person in charge of the blasting. All wires shall be done through a nonsparking metal for unexploded charges.

(e) No drilling, digging, or picking shall be permitted until all missed holes have been detonated or the authorized representative has approved that work can proceed.

§ 1518.913 Underwater blasting.

(a) A blaster shall conduct all blasting operations, and no shot shall be fired without his approval.

(b) Loading tubes and casings of dissimilar metals shall not be used because of possible electric transient currents from galvanic action of the metals and water.

(c) Only water-resistant blasting caps and detonating cords shall be used for all marine blasting. Loading shall be done through a nonsparkling metal loading tube when tube is necessary.

(d) No blast shall be fired while any vessel under way is closer than 1,500 feet to the blasting area. Those on board vessels or craft moored or anchored within 1,500 feet shall be notified before a blast is fired.

(e) No blast shall be fired while any swimming or diving operations are in progress in the vicinity of the blasting area. If such operations are in progress, signals and arrangements shall be agreed upon to assure that no blast shall be fired while any person is in the water.

(f) Flares shall be set up to warn of impending firing. Blasting flags shall be displayed.

(g) The storage and handling of explosives aboard vessels used in underwater blasting operations shall be according to provisions outlined herein on handling and storing explosives.

§ 1518.914 Blasting in excavation work under compressed air.

(a) Detonators and explosives shall not be stored or kept in tunnels, shafts, or caissons. Detonators and explosives for each round shall be taken directly from the magazines to the blasting zone and immediately loaded. Detonators and explosives left over after loading a round shall be removed from the working chamber before the connecting wires are connected up.

(b) When detonators or explosives are bought into an air lock, no employee except the powderman, blaster, lock tender and the employees necessary for carrying, shall be permitted to enter the air lock. No other material, supplies, or equipment shall be locked through with the explosives.

(c) Detonators and explosives shall be taken separately into pressure working chambers.

(d) The blaster or powderman shall be responsible for the receipt, unloading, storage, and on-site transportation of explosives and detonators.

(e) All metal pipes, rails, air locks, and steel tunnel lining shall be electrically bonded together and grounded at or near the portal or shaft, and such pipes and rails shall be cross-bonded together at not less than 1,000-foot intervals throughout the length of the tunnel. In addition, each low air supply pipe shall be grounded at its delivery end.

(f) The explosives suitable for use in wet holes shall be water-resistant and shall be Fume Class 1.

(g) When tunnel excavation in rock face is approaching mixed face, and when tunnel excavation is in mixed face, blasting shall be performed with light charges and with light burden on each hole. Advance drilling shall be performed as tunnel excavation in rock face approaches mixed face, to determine the general nature and extent of rock cover and the remaining distance ahead to soft ground as excavation advances.

§ 1518.915 Definitions.

(a) "American Table of Distances" (also known as Quantity Distance Tables) means American Table of Distances for Storage of Explosives as revised and approved by the Institute of the Makers of Explosives, September 30, 1955.

(b) "Blast area"—The area in which explosives loading and blasting operations are being conducted.

(c) "Blaster"—The person or persons authorized to use explosives for blasting purposes and meeting the qualifications contained in § 1518.901.

(d) "Blasting agent"—A blasting agent is any material or mixture consisting of a fuel and oxidizer used for blasting, but not classified an explosive and in which none of the ingredients is classified as an explosive provided the furnished (mixed) product cannot be detonated with a No. 8 test blasting cap when confined. A common blasting agent presently in use is a mixture of ammonium nitrate (NH_4NO_3) and carbonaceous combustibles, such as fuel oil or coal, and may either be procured, premixed and packaged from explosives companies or mixed in the field.

(e) "Blasting cap"—A metallic tube closed at one end, containing a charge of one or more detonating compounds, and designed for and capable of detonation from the sparks or flame from a safety fuse inserted and crimped into the open end.

(f) "Block holing"—The breaking of boulders by firing a charge of explosives that has been loaded in a drill hole.

(g) "Conveyance"—Any unit for transporting explosives or blasting agents, including but not limited to trucks, trailers, rail cars, barges, and vessels.

(h) "Detonating cord"—A flexible cord containing a center core of high explosives which when detonated, will have sufficient strength to detonate other cap-sensitive explosives with which it is in contact.

(i) "Detonator"—Blasting caps, electric blasting caps, delay electric blasting caps, and nonelectric delay blasting caps.

(j) "Electric blasting cap"—A blasting cap designed for and capable of detonation by means of an electric current.

(k) "Electric blasting circuitry"—

(1) Bus wire. An expendable wire, used in parallel or series, in parallel circuits, to which are connected the leg wires of electric blasting caps.

(2) Connecting wire. An insulated expendable wire used between electric blasting caps and the leading wires or between the bus wire and the leading wires.

(3) Leading wire. An insulated wire used between the electric power source and the electric blasting cap circuit.

(4) Permanent blasting wire. A permanently mounted insulated wire used between the electric power source and the electric blasting cap circuit.

(l) "Electric delay blasting caps"—Caps designed to detonate at a predetermined period of time after energy is applied to the ignition system.

(m) "Explosives"—(1) Any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion; that is, with substantially instantaneous release of gas and heat, unless such compound, mixture or device is otherwise specifically classified by the U.S. Department of Transportation.

(2) All material which is classified as Class A, Class B, and Class C explosives by the U.S. Department of Transportation.

(3) Classification of explosives by the U.S. Department of Transportation is as follows:

Class A Explosives. Possessing detonating hazard, such as dynamite, nitroglycerin, picric acid, lead azide, fulminate of mercury, black powder, blasting caps, and detonating primers.

Class B Explosives. Possessing flammable hazard, such as propellant explosives, including some smokeless propellants.

Class C Explosives. Include certain types of manufactured articles which contain Class A or Class B explosives, or both, as components, but in restricted quantities.

(n) "Fuse lighters"—Special devices for the purpose of igniting safety fuse.

(o) "Magazine"—Any building or structure, other than an explosives manufacturing building, used for the storage of explosives.

Class I magazine. A magazine designed for the storage of more than 50 pounds of explosives.

Class II magazine. A magazine designed for the storage of less than 50 pounds of explosives.

(p) "Misfire"—An explosive charge which failed to detonate.

(q) "Mud-capping" (sometimes known as bulldozing, adobe blasting, or dobying). The blasting of boulders by placing a quantity of explosives against a rock, boulder, or other object without confining the explosives in a drill hole.

(r) "Nonelectric delay blasting cap"—A blasting cap with an integral delay element in conjunction with and capable of being detonated by a detonation impulse or signal from miniaturized detonating cord.

(s) "Primary blasting"—The blasting operation by which the original rock formation is dislodged from its natural location.

(t) "Primer"—A cartridge or container of explosives into which a detonator or detonating cord is inserted or attached.

(u) "Safety fuse"—A flexible cord containing an internal burning medium by which fire is conveyed at a continuous and uniform rate for the purpose of firing blasting caps.

(v) "Secondary blasting"—The reduction of oversize material by the use of explosives to the dimension required for handling, including mudcapping and blockholing.

(w) "Stemming"—A suitable inert incombustible material or device used to confine or separate explosives in a drill hole, or to cover explosives in mudcapping.

(x) "Springing"—The creation of a pocket in the bottom of a drill hole by the use of a moderate quantity of explosives in order that larger quantities or explosives may be inserted therein.

(y) "Water gels, or slurry explosives"—A wide variety of materials used for blasting. They all contain substantial proportions of water and high proportions of ammonium nitrate, some of which is in solution in the water. Two broad classes of water gels are: (1) Those which are sensitized by a material classed as an explosive, such as TNT or smokeless powder, and (2) those which contain no ingredient classified as an explosive; these are sensitized with metals such as aluminum or with other fuels. Water gels may be premixed at an explosives plant or mixed at the site immediately before delivery into the bore hole.

Subpart V—Power Distribution and Transmission Lines

§ 1518.950 Power distribution lines.

(a) *General requirements.* (1) Before starting work on lines, an inspection and test shall be made to determine whether circuits are energized or denergized.

(2) Operating voltages of equipment and lines shall be determined before work is performed on or near energized parts.

(3) Rubber protective equipment shall meet the requirements of the ANSI J6—J6.1–1950(R1962) Rubber Insulating Line Hose; J6.2–1950(R1962) Rubber Insulator Hoods; J6.4–1950(R1962) Rubber Insulating Blankets; J6.5–1962 Rubber Insulating Sleeves; J6.6–1967 Rubber Insulating Gloves, Specifications for; and J6.7–1935(R1962) Rubber Matting for Use Around Electrical Apparatus (Reaffirmation and Redesignation of C59.4–1935).

(4) Protective hats, meeting the specifications of ANSI Z89.2–1970, Industrial Protective Helmets for Electrical Workers—Class B, shall be worn by employees exposed to the hazards of falling objects, electric shock, and burns.

(b) *Work on energized lines.* (1) Before employees are permitted to work on or near energized lines, the required clearance, climbing, and working space prescribed in the National Electrical Safety Code, ANSI C2.2–1960, Safety Rules for the Maintenance of Electric Supply and Communication Lines, shall be provided.

(2) When approaching or working on energized circuit, except from an insulated aerial lift or similar insulated device, the following minimum distances shall be maintained:

Nominal voltage	Unguarded phase-to-workmen	With barriers phase-to-barriers
	(*Inches*)	(*Inches*)
4,000	8	8
13,000	12	8
26,000	24	12
46,000	24	12
69,000	30	16
115,000	48	20
161,000	48	24
230,000	72	36
500,000	144	144

(3) Climber gaffs less than 1¼-inch in length shall not be used.

(4) Rubber gloves shall not be used with hot sticks for hotline work.

(5) Lockout and tagging. (i) When circuits to be worked on are deenergized, they shall be locked out and tagged.

(ii) Controls shall be locked out and tags attached at any points where circuit can be energized.

(iii) Tags shall be placed and maintained legible to identify equipment or circuits being worked on.

(c) *Safety belts.* (1) Safety belts and straps shall be worn to protect employees working at elevated locations on poles and towers. The use of rope as safety straps is prohibited.

(2) Safety belts shall be inspected before each climb and unsafe belts shall be removed from service.

(3) Employees shall wear safety belts and lanyards attached to the boom when working from aerial lift buckets.

(d) *Grounds for protection of employees.* (1) All circuits shall be treated as energized until grounded in accordance with this section.

(2) A ground stick shall be used to "feel out" a dead circuit to determine if it is deenergized.

(3) When attaching grounds, the ground end shall be attached first and the other end shall be attached and removed by means of insulated tools.

(4) Grounds shall be placed between the work location and all sources of energy.

(i) For line work, grounds shall be placed one span on each side of the work location and not more than 1 mile from the work location.

(ii) A second set of grounds shall be placed on the structure being worked on.

(iii) All grounds shall be tested during progress of the work to ensure that they are effective.

(vi) Open-wire telephone lines on power poles or structures shall be treated as energized lines until they are grounded.

(e) *Aerial lifts.* (1) All aerial lifts shall be designed and constructed in conformance with the applicable requirements of ANSI A92.2–1969, Vehicle Mounted Elevating and Rotating Work Platforms.

(2) Before work is started, the vehicle shall be grounded.

(3) Platform controls shall be tested before employees are raised to work position.

(4) Arm-current reading shall be taken before use each day and when work is to be done on higher voltage lines. Operations shall cease immediately when the leakage-current alarm sounds.

(5) Aerial lift platforms shall be racked or cradled when employees are entering or leaving work bucket.

(f) *Hot sticks, switch sticks, and ground sticks.* (1) All hot sticks, switch sticks, and ground sticks shall be visually inspected before each use and shall be electrically tested at regular scheduled intervals.

(i) Sticks which do not pass visual inspection shall not be used until repaired and tested to prove safe for continued service.

(ii) All sticks shall be tested to withstand the equivalent of 75,000 volts across each foot of length. Electrical tests shall be at 1 year intervals on ground sticks.

(2) Fuse pullers shall be used when pulling or replacing energized primary fuses or when operating fuse cutouts of the open or enclosed types.

(g) *Pole setting in energized lines.* Employees handling poles being set in lines energized above 750 volts shall be protected by insulating rubber gloves.

(h) *Underground lines.* (1) Manholes, vaults, and confined spaces shall not be entered before being tested for flammable, toxic gases or insufficient oxygen.

(2) Ventilation shall be provided, when required, in accordance with Subpart D of this part.

§ 1518.951 Transmission lines.

(a) *General requirements.* Hoisting machinery, site preparation machinery, equipment, and other types of construction machinery used by employees engaged in the construction of transmission towers and erecting poles, shall conform to the applicable requirements of this part.

(b) *Ladders.* Hook or other type ladders, used on structures, shall be provided with a safety device, and it shall be engaged to prevent the ladder from being displaced.

(c) *Stringing wire.* (1) Stringing lines, pulling lines, and all load-bearing hardwear and accessories shall have a safety factor of at least five times the pulling tension.

(2) Pulling lines and accessories shall be inspected before each use and damaged equipment shall be removed from service.

(3) Employees shall not be permitted on towers during stringing.

(4) Handlines used to hoist material shall have a safety factor of three.

(d) *Grounding and bonding.* The following requirements for grounding and bonding shall be complied with when stringing parallel to energized transmission lines:

(1) Pulling and tensioning equipment shall be bonded and effectively grounded. At least two driven grounds shall be used at both the pulling and tensioning setup.

(2) An insulating platform and barriers shall be installed around all conductive parts of the pulling and tensioning equipment.

(3) A moving-type ground shall be installed within 20 feet of the tensioning reel setup to positively and constantly ground each conductor, subconductor, and overhead ground wire during stringing operations.

(4) During stringing operations, each conductor, subconductor, and overhead ground wire shall be grounded at the first tower adjacent to both the tensioning and pulling setup.

(5) Conductors, subconductors, and overhead ground wire shall be grounded at all dead-end or catch-off points.

(6) A driven ground shall be placed at each side and within 10 feet of working areas where conductors, subconductors, and overhead ground wire are being spliced at ground level. The two ends to be spliced shall be effectively bonded to each other. Splicing shall be done on either an insulated platform or a conductive metallic grounding mat bonded to both driven grounds. The grounding mat shall be roped off and an insulated walkway provided for access to the mat.

(7) When performing work from steel towers, clipping crews and other employees working on conductors, subconductors, or overhead ground wire, shall be protected by individual hot-stick, clamp-type grounds.

(8) Moving type grounds shall be designed and installed so as not to exceed 1 ohm resistance as measured between the conductor or overhead ground wire and the point of attachment of the ground lead to the tower or driven ground rod.

(9) Driven ground shall be a flexible ground lead attached to a ⅝-inch diameter or greater 10-foot copper or galvanized-type rod.

(10) Ground leads shall be No. 1.0 AWG copper.

(11) All grounds shall be tested to prove their effectiveness before work starts.

Subpart W—Recording and Reporting Work Injury Frequency and Severity Data and Accident Costs

§ 1518.1000 Definitions for purpose of this subpart.

(a) The term "injury" means accidental injury or death arising out of and in the course of employment, and such occupational disease or infection as arises naturally out of such employment, or as naturally or unavoidably results from such accidental injury, and includes an injury caused by the willful act of a third person directed against an employee because of his employment.

(b) The term "disabling injury" includes any injury which results in death or permanent physical impairment or which makes the injured person unable, on any day after the day of injury, to perform effectively throughout a full shift the essential functions of a regularly established job which is open and available to him.

(c) The term "death" means any work injury which results in death regardless of the time which elapses between the injury and death, and shall be assigned a time charge of 6,000 days.

(d) The term "permanent-total disability" means an injury which permanently and completely disables a worker. It includes the loss, or complete loss, of use of both arms, or hands, or legs, or feet, or eyes, or any combination of these body parts, such as one arm and one leg, one hand and one foot, etc.

(e) The term "permanent-partial disability" means an injury which permanently, but only partially, disables a worker. It includes the total or partial loss, or loss of use, of an arm, hand, leg, finger, etc., or any permanent impairment of a function of the body, or of a part of the body to any degree less than permanent-total disability.

(f) The term "temporary-total disability" means an injury which does not result in death or permanent-total or permanent-partial disability if the injured person, because of his injury, is unable to perform a regularly established job, which is open and available to him, during the entire time interval corresponding to the hours of his regular shift on any one or more days (including Sundays and days off) subsequent to the day of injury.

(g) "Employer" includes any person acting directly or indirectly in the interest of an employer in relation to an employee but shall not include the United States, or any State, or political subdivision of a State, or any labor organization (other than when acting as an employer), or anyone acting in the capacity of officer or agent of such labor organization.

(h) "Employee" includes any individual employed by an employer.

(i) The term "injury-frequency rate" means the number of disabling injuries per million employee-hours worked, obtained by multiplying the total number of disabling injuries by 1 million and dividing that product by the total employee-hours worked.

(j) The term "injury-severity rate" means the number of days lost or charged per million employee-hours worked, obtained by adding the standard time charges for each case of death and permanent impairment to the total number of days of incapacity resulting from all other cases of disabling injuries, multiplying that sum by 1 million and dividing that product by the total number of employee-hours worked.

(k) The term "work injury cost" means those costs of medical, compensation reserves and incidentals accrued in the settlement of a claim or loss to an employee because of a job-connected injury.

§ 1518.1001 Records.

(a) The employer shall maintain a record of each disabling work injury experienced by an employee arising out of and in the course of his employment in any activity covered by the Act as it occurs. This record shall indicate the activity being performed at the time of injury; a description of the accident and the nature of the injury; and the actual number of days lost, or in the case of death or permanent total or permanent partial disability, the number of days charged in accordance with the schedule in § 1518.1003.

(b) The records required by this section shall also indicate the total number of employee-hours worked by all employees in activities covered by the Act.

§ 1518.1002 Injury reports required.

(a) Notification of fatality or serious accident. The employer shall send to the nearest Regional Office, within 10 days, a copy of the report made on each death or serious injury which resulted in hospitalization for over 48 hours.

(b) Annual report. For the year ending December 31, 1972, and for each calendar year thereafter, every employer shall file with the Bureau of Labor Standards, at its central office at Washington, D.C. 20210, on the forms prescribed, an annual summary injury and employment record for all employed personnel under the Act.

(c) This report shall include:

(1) The number of man-hours under the Act;

(2) The number of deaths;

(3) The number of injuries on which compensation was paid;

(4) The cost incurred by payment of medical, compensation, and reserve expense in connection with the payment of claim or loss to an employee because of a job-connected injury.

(d) *Filing of report.* The report under this section shall be filed within the month following the end of the calendar year to which the report applies.

§ 1518.1003 Schedule of time charges.

The specific charge (in days) assigned to a permanent-partial, permanent-total, or fatal injury. For these charges see Table W–1, Tabulation of Scheduled Charges, outlines the specific charge (in days) assigned to a permanent-partial, permanent-total, or fatal injury.

TABLE W–1—TABULATION OF SCHEDULED CHARGES

A. For Loss of Member—Traumatic or Surgical

FINGERS, THUMB, AND HAND

Amputation involving all or part of bone*	Thumb	Fingers			
		Index	Middle	Ring	Little
Distal phalange	300	100	75	60	50
Middle phalange		200	150	120	100
Proximal phalange	600	400	300	240	200
Metacarpal	900	600	500	450	400
Hand at wrist, 3,000.					

TOE, FOOT, AND ANKLE

Amputation involving all or part of bone*	Great toe	Each of other toes
Distal phalange	150	35
Middle phalange		75
Proximal phalange	300	150
Metatarsal	600	350
Foot at ankle, 2,400.		

ARM

Any point above** elbow, including shoulder joint	4,500
Any point above wrist and at or below elbow	3,600

LEG

Any point above** knee	4,500
Any point above ankle and at or below knee	3,000

B. Impairment of Function

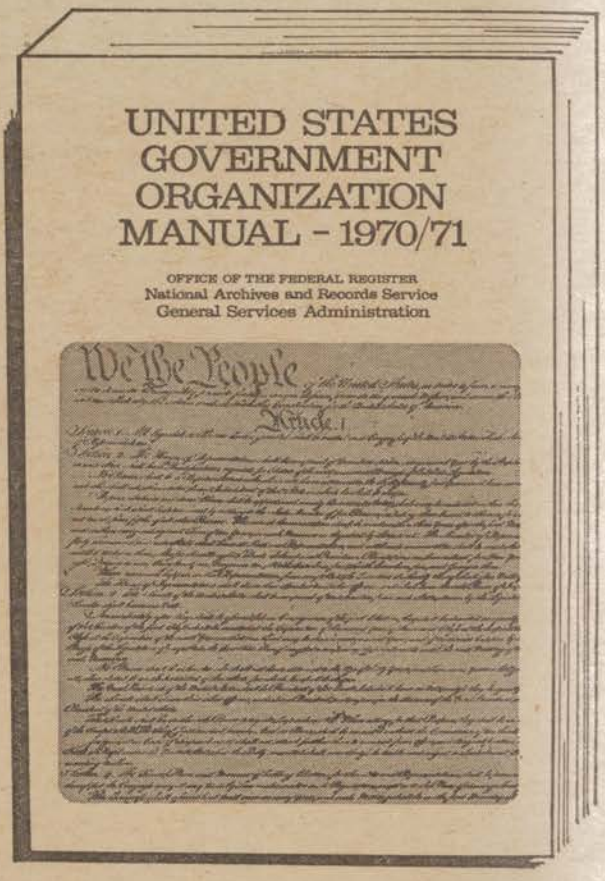
One Eye (loss of sight), whether or not there is sight in the other eye	1,800
Both Eyes (loss of sight), in one accident	6,000
One Ear (complete industrial loss of hearing), whether or not there is hearing in the other ear	600
Both Ears (complete industrial loss of hearing), in one accident	3,000
Unrepaired Hernia	50

*If the bone is not involved, use actual days lost, and classify as temporary total disability. The tuft of the distal bone of a finger or toe is considered bone if it shows in X-rays.

**The term "above" when applied to the arm means toward the shoulder, and when applied to the leg, means toward the hip.

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