

UNITED STATES DEPARTMENT OF LABOR
BULLETIN OF THE WOMEN'S BUREAU, NO. 94

**STATE REQUIREMENTS FOR
INDUSTRIAL LIGHTING**

**A Handbook
for the Protection of Women Workers, Showing
Lighting Standards and Practices**

[PUBLIC—No. 259—66TH CONGRESS]

[H. R. 13229]

AN ACT To establish in the Department of Labor a bureau to be known as the Women's Bureau

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be established in the Department of Labor a bureau to be known as the Women's Bureau.

SEC. 2. That the said bureau shall be in charge of a director, a woman, to be appointed by the President, by and with the advice and consent of the Senate, who shall receive an annual compensation of \$5,000. It shall be the duty of said bureau to formulate standards and policies which shall promote the welfare of wage-earning women, improve their working conditions, increase their efficiency, and advance their opportunities for profitable employment. The said bureau shall have authority to investigate and report to the said department upon all matters pertaining to the welfare of women in industry. The director of said bureau may from time to time publish the results of these investigations in such a manner and to such extent as the Secretary of Labor may prescribe.

SEC. 3. That there shall be in said bureau an assistant director, to be appointed by the Secretary of Labor, who shall receive an annual compensation of \$3,500 and shall perform such duties as shall be prescribed by the director and approved by the Secretary of Labor.

SEC. 4. That there is hereby authorized to be employed by said bureau a chief clerk and such special agents, assistants, clerks, and other employees at such rates of compensation and in such numbers as Congress may from time to time provide by appropriations.

SEC. 5. That the Secretary of Labor is hereby directed to furnish sufficient quarters, office furniture, and equipment for the work of this bureau.

SEC. 6. That this act shall take effect and be in force from and after its passage.

Approved, June 5, 1920.

UNITED STATES DEPARTMENT OF LABOR

W. N. DOAK, SECRETARY

WOMEN'S BUREAU

MARY ANDERSON, Director

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By
MARIE CORRELL



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LETTER OF TRANSMITTAL

UNITED STATES DEPARTMENT OF LABOR,
WOMEN'S BUREAU,
Washington, February 15, 1932.

SIR: I have the honor to submit a report on the lighting of work places and the importance of good lighting to the safety of working women.

There is apparent an increasing interest in lighting problems on the part of employers, due partly to the fact that good lighting pays for itself, but investigations of this bureau have shown that there are problems either of inadequacy or of glare in a large proportion of work places.

Since working conditions are improved both by employers voluntarily installing good equipment and by regulations of State departments of labor, this study presents detailed analyses of the recently adopted lighting code of the American Standards Association and of the State lighting codes and regulations.

I am grateful for the courteous cooperation of State officials in supplying information; of Dr. Janet Howell Clark in discussing the relationship of lighting and eye fatigue; of H. H. Magdsick, of the Illuminating Engineering Society, in writing the foreword of this report and in giving technical advice; of James D. Hackett, of the New York Department of Labor, in giving the report a critical reading; and of the American Standards Association and of the Illuminating Engineering Society in permitting the summarizing of the revised code and in expert assistance in many ways.

The report is the work of Marie Correll, of the division of research.

Respectfully submitted.

MARY ANDERSON, *Director.*

Hon. W. N. DOAK,
Secretary of Labor.

FOREWORD

The sense of sight dominates the activities of the industrial worker and is responsible for most of his usefulness. Its processes use up far more human energy than does any other sense. Yet eyes are constantly neglected; they are being worn out too soon in our homes, in schools, and in industry alike. We go through much of our working lives with efficiency impaired and opportunity limited because provisions for lighting have not developed fast enough to keep pace with the changes in man's mode of life and work. For the outdoor pursuits entailing relatively distant vision under a high order of illumination, under which our eyes evolved, we have substituted indoor activities which impose ever-increasing demands for concentrated near vision.

The effects of insufficient and improper lighting unfortunately do not at once make themselves apparent, for the visual process is a complicated one and the eye is able to adjust itself to render a partial service over a wide range of conditions. But the results are none the less definite and widespread: Accidents, eye strain that saps human energy, lowered accomplishment, visual defects, and even impaired health.

In issuing this publication on the lighting of work places, the Women's Bureau of the Department of Labor makes an important contribution to a more general understanding of lighting conditions and their effects in industry. It offers sound guidance toward safer and more effective illumination. In doing this the bureau is saving the lives and limbs and protecting the vision of workers. It is promoting the efficiency of industry, at the same time conserving human resources and adding to the well-being and happiness of our people.

H. H. MAGSICK,
*Chairman of Committee on Industrial and School Lighting,
Illuminating Engineering Society.*

NELA PARK, CLEVELAND, OHIO, February, 1932.

SUGGESTIONS FOR EMPLOYERS, EMPLOYEES, AND STATE DEPARTMENTS OF LABOR

To employers:

Decide that adequate light with protection from glare is essential for your plants and then secure it. The following suggestions may help you to do so:

1. Lighting is a technical problem. Consult a lighting expert in your community if possible. If not, ask for aid from your State department of labor. (See Appendix, pp. 49 to 62, for a summary of the law in your State.)

2. Determine whether your plant illumination meets the standards of the American Standard Code of Lighting Factories, Mills, and Other Work Places. (A fairly complete summary and outline of this code is given on pp. 11 to 23.) A copy may be secured from the American Standards Association and the Illuminating Engineering Society, both at 29 West Thirty-ninth Street, New York, N. Y., for 20 cents, or from the Bureau of Labor Statistics, United States Department of Labor, Bulletin No. 556.

3. A foot-candle meter to measure the illumination level should be used at frequent intervals. Its use is a check on maintenance as well as on installation. (See p. 16.)

Eyes adjust themselves to almost any light; visual estimates can not satisfactorily take the place of actual measurements.

4. Expert information and aid on lighting problems for both natural and artificial light can be secured from the following sources:

The Illuminating Engineering Society, 29 West Thirty-ninth Street, New York, N. Y.; General Electric Lighting Institute, at Nela Park, Cleveland, Ohio; Commercial Engineering Department, Westinghouse Lamp Co., Bloomfield, N. J.; New York Lighting Institute, Grand Central Palace, New York, N. Y.; Chicago Lighting Institute, 20 North Wacker Drive, Chicago, Ill.; the lighting service departments of many local light and power companies or electrical associations; the National Safety Council, Civic Opera Building, 20 North Wacker Drive, Chicago, Ill.

Bulletins on lighting problems for particular industries and the advice of lighting experts can be secured from these sources without charge. Some State departments of labor have exhibits of lighting equipment.

5. Use your lighting facilities wisely. Some one person who has been given instruction on lighting problems should be responsible for turning on the lights, adjusting window and lamp shades, watching the lighting in aisles, hallways, etc. Work places should be arranged to secure the most effective use of natural light.

6. After installing an adequate lighting system, plan to secure efficient maintenance. Cleaning windows, cleaning and repainting walls and ceilings, and replacing bulbs and broken reflectors are important phases of careful maintenance. This responsibility should be given to some person or persons in your plant.

To employees:

Your eyes are a valuable asset—protect them.

1. If the light on your work seems inadequate, request that it be adjusted.

2. If a light hurts your eyes, some condition of glare may exist; ask that it be corrected. It is bad to sit facing a glaring window. Light can be too bright as well as too dim.

3. The lighting facts given in this bulletin may help you.

To State departments of labor:

Proper illumination is necessary for health and safety. There are standards for good lighting that have been tested by experience—guessing is no longer necessary.

1. Several States have found lighting codes helpful guides and standards. (See pp. 24 to 44.)

2. The foot-candle meter is used by some State departments of labor to measure the lighting level, usually in questionable cases.

3. While the entire field of lighting is highly technical and requires the experience of experts (some State departments of labor employ lighting experts), the basic requirements of good lighting, and the principles upon which these are based, are not difficult to understand. Inspectors with some information and training on this problem can improve lighting in places of employment.

APPENDIX

SUMMARY OF STATE REQUIREMENTS FOR LIGHTING IN PLACES OF EMPLOYMENT, WITH SPECIAL REFERENCE TO FACTORY AND MERCANTILE WORKROOMS, PASSAGEWAYS, AND EXITS,¹ BY STATE

[NOTE.—Based on analysis of State laws and replies from officials of State departments of labor or industrial commissions, 1930-31. For text discussion of these data see pp. 24 to 48.]

No attempt has been made to list every law or regulation on lighting in each State. The illumination requirements of the State departments of labor or industrial commissions are covered where they apply to general work places in most industries. Not all requirements for mines, tenement houses, foundries, hotels and other food establishments, toilets,² hazardous industries, and wiring are included. The requirements of State boards of health and State fire marshals have been included for certain States, but preliminary inquiries showed that most board of health regulations apply only to food establishments and that in most cases the State fire marshals' requirements have to do only with the marking of exits by red lights. The former provision is primarily for the benefit of the public; the latter, for fire protection rather than for the proper illumination of exits for safe egress. These regulations are not included here. A few States have building codes, and sections of these that apply to lighting are included.³

ALABAMA

Legal requirements.—None.

Enforcement practice.—When inspections are made in connection with employment of minors, the inspectors take note of the lighting arrangements in the establishment. If the lighting is adequate, they comment on this fact. If it is inadequate, they make suggestions as to how it might be improved. There are no rules or regulations. There is no definite follow-up to see whether or not suggestions are carried out. All comments on lighting are made in an informal manner.

Enforcement agency.—Child Welfare Department, Child Welfare Commission, Montgomery.

ARIZONA

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Industrial Commission, Phoenix.

ARKANSAS

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Bureau of Labor and Statistics, Little Rock.

¹ For a supplementary list of references to State requirements pertaining to industrial lighting, see National Safety Council's Safe Practices Pamphlet No. 94 on State Safety Requirements in Industry, in National Safety News, March, 1930, vol. 21, No. 3, pp. 16-26.

² Women's Bureau Bulletin No. 99 gives the State requirements regarding lighting in toilet rooms. California, Connecticut, Delaware, District of Columbia, Idaho, Illinois, Kentucky, Maine, Maryland, Massachusetts, Minnesota, Montana, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Washington, West Virginia, and Wisconsin have lighting laws or rules for these places.

³ Details on enforcement received from State agencies. Except where some action is mentioned, States with no legal requirements do not inspect for lighting.

CALIFORNIA ⁴

Legal requirements.—Has a lighting code. (See pp. 24 to 44 of this report.)—General Lighting Safety Orders issued by the Industrial Accident Commission.

Every workroom shall be supplied with adequate natural or artificial light during the working hours. The sources of illumination shall be of such a nature and so placed as to provide a reasonably constant and uniform illumination over the necessary area of work and avoid the casting of shadows on the work. They shall be so placed or shaded that light from them does not fall directly on the eyes of an operator when engaged on her work. Applies where women or minors are employed in laundry and manufacturing industries.—Industrial Welfare Commission's Order No. 4, amended—laundry and manufacturing industries. Effective March 8, 1919.

Every room in which women and minors are employed shall be supplied with adequate natural or artificial light, in accordance with the General Lighting Safety Orders of the Industrial Accident Commission.—Industrial Welfare Commission's Order No. 13—mercantile establishments. Effective February 17, 1920.

Enforcement practice.—Regular inspections are not made in manufacturing and mercantile establishments, but in special cases an electrical engineer does inspect for lighting, using a foot-candle meter to measure the amount of illumination.

Lighting code is considered out of date and is not enforced, though the department plans to prepare another code.

Enforcement agency.—Department of Industrial Relations, San Francisco.

COLORADO

Legal requirements.—None.

Enforcement practice.—The chief factory inspector states that on their inspection blanks are three questions on lighting: Are red lights provided for all exits (above 2 stories)? Are premises sufficiently lighted? Is artificial light provided?

When an inspector finds insufficient lighting he recommends changes. According to the correspondence from the chief factory inspector, the law seems to be made to protect the public against latent dangers, rather than the persons employed in the establishment.

Enforcement agency.—Bureau of Labor Statistics, Denver.

CONNECTICUT

Legal requirements.—All factories and buildings where machinery is used shall be well lighted. There is no law applying to mercantile establishments.—General Statutes of Connecticut, revision of 1930, chapter 131, section 2355.

Enforcement practice.—Lighting inspections are made at least once a year in manufacturing and mercantile establishments. The inspector's observation and opinion determines what orders shall be issued.

Enforcement agency.—Department of Labor and Factory Inspection, Hartford.

DELAWARE

Legal requirements.—All workrooms, halls, stairways, and toilets must be properly lighted where women are employed in mercantile, mechanical, transportation, or manufacturing, laundry, baking, printing, or dressmaking establishments, place of amusement, telephone or telegraph office or exchange, hotel, restaurant, or office.—Session Laws, 1917, chapter 231, sections 1, 5.

Enforcement practice.—No inspections are made for lighting.

Enforcement agency.—Labor Commission, Wilmington.

DISTRICT OF COLUMBIA

Legal requirements.—Sufficient light is required in any store, factory, workshop, or other structure or place of employment where workmen or workwomen are employed for wages. Orders of Commissioners of the District of Columbia.—Laws and Regulations Relating to Public Health, in force July 1, 1930. Orders 1 and 3, pages 246, 247.

⁴Industrial Accident Commission's safety orders for certain specific industries not included.

Every stairway or other exit and the corridors and passageways appurtenant thereto shall be provided with an adequate system of lighting. At least one light at every floor landing, within the stair inclosure, and a red light over every door leading to an exit or from an exit to the street. This is required for office buildings, stores, factories, workshops, and all other buildings in the process of erection, alteration, or repair. There are supplemental requirements for certain conditions such as night occupancy, old and new buildings, etc. Orders of Commissioners of the District of Columbia.—The Building Code, July 1, 1930, pp. 55, 89, 110.

Enforcement practice.—Inspectors visit industrial establishments regularly about four times a year. They have no control over light in hallways.

Enforcement agency.—District Health Department, Washington, D. C.

FLORIDA

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—State Labor Inspector, Jacksonville.

GEORGIA

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Department of Commerce and Labor, Atlanta.

IDAHO

Legal requirements.—None.⁵

Enforcement practice.—None.

Enforcement agency.—Industrial Accident Board, Boise.

ILLINOIS

Legal requirements.—The following statute does not require lighting at the work place: In all factories, mercantile establishments, mills, or workshops, a proper light shall be kept burning by the owner or lessee in all main passageways, main hallways, at all main stairs, main stair landings, and shafts, and in front of all passenger or freight elevators, upon the entrance floors and upon other floors, on every workday of the year, from the time that the building is opened for use until the time when it is closed, except at times when the influx of natural light shall make artificial light unnecessary: *Provided*, That when two or more tenants occupy different floors in one building, such elevator shafts need be lighted only on the floors occupied and used by employees.—Smith-Hurd. Illinois Revised Statutes, 1929, chapter 48, section 119.

The Division of Fire Prevention of the Department of Trade and Commerce, Springfield, has additional requirements for certain hazardous industries.—Department of Trade and Commerce, Division of Fire Prevention.

Enforcement practice.—No inspections are made for lighting in manufacturing and mercantile establishments.

Enforcement agency.—Department of Labor, Springfield.

INDIANA

Legal requirements.—By a written permit the chief inspector may allow persons to be employed in a room where there are less than 400 cubic feet but not less than 250 cubic feet of air space for each person employed between 6 o'clock in the evening and 6 o'clock in the morning: *Provided*, such room is lighted by electricity at all times during such hours while persons are employed therein.—Burns's Annotated Indiana Statutes, Watson's Revision 1926, ch. 72, sec. 9423.

⁵ The Idaho State Chamber of Commerce states that there is an independent organization known as the All-Idaho Safety Council that has adopted and is suggesting the Code of Lighting Factories, Mills, and Other Work Places, approved by the American Standards Association Aug. 18, 1930. Although the council has no committee or individual appointed to compel compliance with its suggestions, it is receiving the heartiest cooperation on the part of builders in adopting the suggested code.

The chairman of the industrial board, the secretary of the State board of health, and the State fire marshal are the administrative committee of a State building council that is responsible for the enforcement of building laws and the making of regulations for buildings in the State. Their requirements for lighting are as follows:

6-2-219. All stairways and exits and the passageways appurtenant thereto except as otherwise provided shall be properly illuminated to facilitate egress. Such illumination shall be continuous during the time that the conditions of occupancy require that the exit ways be open or available. Artificial lighting shall be employed at such places and for such periods of time as required to maintain the illumination of the full intensities herein specified.

6-2-220. (a). The floors of exit ways of buildings used for public assembly or congregation, schools, department stores, factories, mills, and other occupancies as required shall be illuminated at all principal points such as angles and intersections of corridors and passageways, stairways, landings of stairs, and exit doorways to intensities of not less than 1 foot-candle and at other points to intensities of not less than 0.5 foot-candle.*

6-2-221. The lighting source shall be arranged to assure continued illumination of all exit ways in cases of emergency caused by the failure of the principal lighting of the building. Where electric current is the source of the lighting of buildings used for public assembly or congregation, the emergency lighting shall be from a source independent of that for the general lighting or shall be controlled by an automatic device which will operate reliably to switch the circuit to an independent secondary source in the event of failure of the primary source of current.

6-2-222. The lighting and all control apparatus shall be installed so as to be under the supervision of and controlled only by authorized persons.

Wiring, etc., must be in accordance with the Electrical Rules and Regulations of the Administrative Building Council.—Administrative Building Council of Indiana. Building Rules and Regulations, approved and promulgated October 15, 1928, pp. 82, 83, 192.

Enforcement practice.—None.

Enforcement agency.—Industrial Board, Indianapolis.

IOWA

Legal requirements.—None.

Enforcement practice.—The deputy labor commissioner states that inspections are made in manufacturing and mercantile establishments, and that when conditions are noticeably poor, inspectors call attention to this fact and ask that lighting be improved with ventilation requests.

Enforcement agency.—Bureau of Labor, Des Moines.

KANSAS

Legal requirements.—If the inspector finds that lighting is such as to be injurious to the health of persons employed or residing in any factory or mill, workshop, private works or State institution having shops or factories, mercantile establishment, laundry, or any other place of business, he shall notify, in writing, the owner, proprietor, agent, or lessee of such building, establishment, or place to make the changes deemed necessary for the safety and protection of the employees or other persons endangered by such conditions.—Revised Statutes of Kansas, annotated 1923, chapter 44, section 636.

All rooms shall be properly and adequately lighted during the working hours. Where the light is insufficient, artificial illumination in every workroom shall be installed, arranged, and used so that the light furnished will at all times be sufficient and adequate for the work carried on therein, and prevent unnecessary strain on the vision, or glare in the eyes of the workers. Applies to mercantile, laundries, dyeing, dry-cleaning and pressing establishments where women are employed.—Commission of Labor and Industry Orders affecting women workers, No. 1, Laundry; No. 3, Mercantile.

* Prescribes the minimum intensities of illumination; generally greater intensities should be provided. The additional illumination should be from lights placed alternately with the required emergency lights and supplied from the general lighting circuits or sources, or other sources similar to the required emergency lighting sources.

Ample lighting shall be provided and so arranged that direct rays do not shine into the worker's eyes. Applies where women are employed in any manufacturing occupation.—Commission of Labor and Industry; Order No. 2, Manufacturing.

Enforcement practice.—Manufacturing establishments are inspected yearly. Some inspections are made in mercantile establishments. An inspector uses his own judgment to determine when lighting is adequate and sees that stairways and exits are light and accessible.

Enforcement agency.—Commission of Labor and Industry, Topeka.

KENTUCKY

Legal requirements.—1. A rule of the State Board of Health requires that the lighting of places of employment shall be adequate and shall be maintained with strict regard for the health, comfort, and safety of employees. This applies to every person, firm, or corporation operating a factory, mill, mine, quarry, store, office, workshop, or work place of any description, including building and construction work, employing one or more persons to labor. (Rules for food establishments do not make more definite requirements.)—Kentucky Laws and Rules of Interest and Pertaining to Children, Labor, Safety, Industry. Department of Labor, Bul. 32, pages 44–45, March, 1929.

2. The Department of Labor recommends the lighting code of the American Standards Association and the Illuminating Engineering Society, reprinting the 1922 edition, and also recommends certain daylighting suggestions of the United States Public Health Service.—Industrial Housekeeping (with suggestions). Department of Labor, Bul. 31, pages 51–90.

3. A safety standard of the Department of Fire Prevention and Rates requires that every inclosed stairway and exit shall be provided with an adequate system of lighting. Where the State fire marshal considers necessary, such lighting circuit shall be separate from that "indirectly" used throughout the building.—Standards of Safety, adopted and approved by Department of Fire Prevention and Rates, Section II, page 22, 1929.

Enforcement practice.—1. Department of Labor is required by law to report violations of health laws and rules to health officials.—Session Laws 1924, chapter 68, section 10.

2. Manufacturing and mercantile establishments are inspected irregularly. Inspectors are given some training on lighting problems by the engineers of the Actuarial Bureau and by the chief labor inspector.

3. No information.

Enforcement agency.—1. Bureau of Agriculture, Labor, and Statistics, Frankfort. State Board of Health.

2. Department of Labor of the Bureau of Agriculture, Labor, and Statistics.

3. Department of Fire Prevention and Rates.

LOUISIANA

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Bureau of Labor and Industrial Statistics, New Orleans.

MAINE

Legal requirements.—If the commissioner or any authorized agent of labor and industry finds that lighting is such as to be injurious to the health of the persons employed or residing in any factory or mill, workshop, private works or State institution that has shops or factories, he shall notify, in writing, the owner, proprietor, or agent of such workshops or factories to make, within 30 days, the alterations or additions by him deemed necessary for the safety and protection of the employees.—Revised Statutes of Maine, 1930, chapter 54, section 13.

Enforcement practice.—Inspectors make their own personal judgment of lighting when inspections, at irregular intervals, are made in manufacturing and mercantile establishments.

Enforcement agency.—Department of Labor and Industry, Augusta.

MARYLAND

Legal requirements.—Industrial Accident Commission has adopted a lighting code. (See pp. 24 to 44 of this report.)—Code of Lighting Factories, Mills, and Other Work Places, sponsored by the Illuminating Engineering Society, approved as an American standard by the American Standards Association, August 18, 1930.

Has also adopted a building exits code that requires that exit lighting must not be less than that required by the American Standard Code of Lighting Factories, Mills, and Other Work Places.—Building Exits Code, sponsored by the National Fire Protection Association, approved as an American tentative standard by the American Standards Association, September 11, 1929, section 12, Orders 1201–1204; section 23, Order 2317a.

Enforcement practice.—A director of safety was appointed January, 1931, and plans were made to enforce the standards.

Enforcement agency.—State Industrial Accident Commission, Baltimore.

MASSACHUSETTS

Legal requirements.—Has an industrial lighting code. (See pp. 24 to 44 of this report.)—Lighting Code for Factories, Workshops, Manufacturing, Mechanical, and Mercantile Establishments, Department of Labor and Industries, Division of Industrial Safety, Industrial Bul. No. 18.

The section of the law on which this code is based provides that every factory, workshop, manufacturing, mechanical, and mercantile establishment shall be well lighted, according to reasonable rules and regulations adopted by the department with reference thereto.

The industrial health inspectors shall, when obtaining information concerning the proper lighting of industrial establishments, make such investigation concerning the eye and vision in their relation to occupational diseases, including injuries to the eyes of the employees and to the pathological effects produced or promoted by the circumstances under which the various occupations are carried on, as in the opinion of the department is practicable, and it shall from time to time issue such printed matter containing suggestions to employers and employees for the protection of the eyes of the employees as it may deem advisable.—General Laws, 1921, ch. 149, secs. 113, 114.

Enforcement practice.—Lighting is inspected once each year, approximately, in most manufacturing and mercantile establishments by inspectors of the division of industrial safety. Hazardous industries are inspected three or four times a year. The inspectors are trained about lighting problems through lectures given by a lighting expert at the Massachusetts Institute of Technology. A foot-candle meter is used where it is necessary to determine the quantity of illumination. There is an electrical expert in the department.

Enforcement agency.—Department of Labor and Industries, Boston.

MICHIGAN

Legal requirements.—Has no legal requirements for general or exit lighting in manufacturing and mercantile establishments, except that sufficient light is required in basement rooms where special processes are performed and in certain tenement manufacturing. Foundries must be reasonably well lighted.—Compiled Laws of Michigan, 1929, ch. 149, secs. 8337, 8346, 8341.

Enforcement practice.—Lighting is noted in annual inspections of manufacturing and mercantile establishments by factory and store inspectors, respectively, who use their own judgment of sufficient lighting.

Enforcement agency.—Department of Labor and Industry, Lansing.

MINNESOTA

Legal requirements.—All stairways and inclined footways, and all points where there is a break or change in the floor level or in the character of the floor surface, where persons may have to walk or pass, and all dangerous places, all prime movers and all moving parts of machinery where, on, or about which persons work or pass, or may have to work or pass in emergencies,

¹ The department of labor and industries mentions lighting in some of its orders for special industries and the department of public safety (Boston) has special lighting requirements for fire prevention. These rules are not included.

shall be kept properly and sufficiently lighted during working hours. Applies to all work places except agriculture and domestic service.—Mason's Minnesota Statutes 1927, ch. 23, secs. 4147, 4171.

Enforcement practice.—None.

Enforcement agency.—Industrial Commission, St. Paul. Division of Accident Prevention and Division of Women and Children.

MISSISSIPPI

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Bureau of Industrial Hygiene and Factory Inspection, Jackson.

MISSOURI

Legal requirements.—When the inspector or one of his assistants finds that the lighting of any establishment where labor is employed is such as to be dangerous to the health or safety of employees therein or thereat, he shall at once, in writing, order the owner or owners, or the person or persons in charge of such establishment or place, to make the alterations or additions necessary within 10 days.—Revised Statutes of Missouri, 1929, ch. 95, sec. 13237.

Enforcement practice.—Inspectors use their own judgment to determine when lighting is adequate. Inspections are made every six months and upon complaint in manufacturing and mercantile establishments by State inspectors. There is an electrical expert in the department, and inspectors are given some training on lighting problems.

Enforcement agency.—Department of Labor and Industrial Inspection, Jefferson City.

MONTANA

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Department of Agriculture, Labor and Industry, Helena.

NEBRASKA

Legal requirements.—Has no general legal requirement. Safety codes adopted by the Department of Labor, August 26, 1930, require electric lights in certain hazardous industries: Construction and dry cleaning and dyeing.—Safety codes adopted by Department of Labor, August 26, 1930, pp. 10, 56.

Enforcement practice.—None.

Enforcement agency.—Department of Labor, Lincoln.

NEVADA

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Labor Commissioner, Carson City.

NEW HAMPSHIRE

Legal requirements.—(a) Lighting: All workrooms, passageways, and stairways and all basements or other places where workmen are employed or are obliged to go shall be at all times suitably lighted. Wherever natural illumination is not sufficient, artificial means of illumination shall be installed. To secure the best results from natural lighting, all windows should be kept clean and properly shaded to prevent glare. Walls and ceilings of all workrooms should be painted a light color and kept reasonably clean.

(b) Avoidance of glare; diffusion and distribution of light: Lighting, whether natural or artificial, shall be such as to avoid a glare, objectionable shadows, and extreme contrasts, and to provide a good distribution of light; in artificial lighting systems, lamps shall be so installed in regard to height, location, spacing, and reflectors, shades, or other suitable accessories as to accomplish these objects.

Bare-light sources, such as exposed lamp filaments located within the ordinary field of the worker's vision, are presumptive evidence of glare.

(c) Exit and emergency lighting: The lighting to be provided in all stairways and exits of factories and in the passageways appurtenant thereto shall be supplied so as not to be subject to failure because of the failure of the room or work space lighting from internal causes, and preferably from an independent connection extending back to the main service entrance for the building.

Applies to factories, mills, workshops, or other manufacturing or mercantile establishments in which three or more persons are regularly employed.—Bureau of Labor, Factory Inspection Standard No. 2, Lighting, supplemental to Session Laws, 1926, ch. 177, secs. 1, 7.

Enforcement practice.—Inspections are made of lighting in annual visits made in manufacturing establishments by factory inspector and in mercantile establishments by a woman factory inspector. The labor commissioner states that they always pay special attention to lighting in their general inspection work, and as all the members of his staff have been employed under all kinds of lighting conditions, they are very competent in making recommendations to improve lighting conditions.

Enforcement agency.—Bureau of Labor, Concord.

NEW JERSEY

Legal requirements.—Has a lighting code as an inspectors' standard. (See pp. 24 to 44 of this report.)—Code of Lighting Factories, Mills, and Other Work Places, sponsored by the Illuminating Engineering Society, approved as an American standard by the American Standards Association, August 18, 1930.

The law requires that, when in the opinion of the commissioner it is necessary, the halls or other portions of a building shall be provided with proper lighting facilities.—Cumulative Supplement to Compiled Statutes, 1911–1924, ch. 107, sec. 28.

Enforcement practice.—Lighting inspections are made in manufacturing establishments by the regular force of factory inspectors and in special cases by the electrical inspector as often as a building requires it. Mercantile establishments are not inspected. The electrical inspector uses a foot-candle meter to check the light in questionable cases. In 1930 and 1931 the inspectors were given training on lighting problems, the lighting code, and the use of the foot-candle meter in a series of lectures at the General Electric Lighting Institute, Harrison.

Enforcement agency.—Department of Labor, Trenton.

NEW MEXICO

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—State Inspector of Coal Mines,^a Gallup.

NEW YORK^b

Legal requirements.—Has lighting code for factories and mercantile establishments. (See pp. 24 to 44 of this report.)—Industrial Code Bul. No. 18, Rules Relating to Lighting of Factories and Mercantile Establishments. Code Rules Nos. 50, 51, 52, 53. Industrial Commission of the Department of Labor.

This code has the force of law and supplements sections of the labor law that specify certain lighting requirements in particular places. The basic lighting law is as follows:

1. In every factory proper lighting shall be provided during work hours for—
 - a. All places where persons work or pass, or may have to work or pass in emergencies;
 - b. All elevator cars and entrances;
 - c. All halls and stairs leading to workrooms;
 - d. All moving parts of machinery not required to be guarded by section 256 and the rules of the commission, and dangerous because of their location.
2. In every factory workroom the lighting shall be such as will not cause strain on the vision or glare in the eyes of workers.

^a Only labor agent.

^b Many rules of the industrial code applying to factories and mercantile establishments again mention lighting requirements for specific work places. A few modify the code. These are not included.

3. In the public hallway upon each floor of every factory building a proper light shall be kept burning near the stairs during each working day from the opening of the building until its closing, except when natural light suffices. Such lights shall be arranged to operate reliably when through accident or other cause other lights of the building are extinguished.

Gas jets and other lights.—All gas jets and other lights in factories shall be properly inclosed by globes or wire cages, or shall be otherwise properly protected in a manner approved in the city of New York by the fire commissioner of such city and elsewhere by the commissioner.—Labor Law in Cahill's Consolidated Laws, 1930, chapter 32, secs. 257, 255, 256, 316, 282.

Enforcement practice.—Annually and also upon complaint the factory inspectors inspect lighting in manufacturing and mercantile establishments. An illuminating engineer in the department gives factory inspectors training in the use of the foot-candle meter and in the law regarding lighting. Each supervisor of inspectors has a foot-candle meter, which is used to check the amount of illumination where there is any question about it. Before any prosecution is started the illuminating engineer makes an inspection.

Enforcement agency.—Department of Labor, New York.

NORTH CAROLINA

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Department of Labor and Printing, Raleigh.

NORTH DAKOTA

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Department of Agriculture and Labor, Bismarck.

OHIO

Legal requirements.—Has a lighting code as a recommendation. (See pp. 24 to 44 of this report.)—Industrial Lighting Code for Factories, Mills, and Other Work Places. The Industrial Commission of Ohio.

The Ohio State Building Code requires that in workshops, factories, mercantile and office buildings—

(a) All rooms in buildings of this classification except storage or other rooms where the nature of the occupancy will not permit shall have adequate facilities for natural light and ventilation independent of the use of adjoining property unless the right to such use has been obtained by deed or instrument;

(b) Natural light and ventilation shall be obtained by means of windows placed in external walls, clerestory windows, or skylight;

(c) Windows shall have movable sash, and skylights shall be ventilated;

(d) All occupied areas in workshops and factories shall be provided with not less than one (1) square foot of glass area to eight (8) square feet of floor area;

(f) No required windows shall be placed nearer any building or adjoining lot line than four (4) feet; and that—

All occupied parts of buildings of this classification shall be adequately lighted at all times; and when not sufficiently lighted by windows, artificial light shall be provided during the day;

Gas, oil, or vapor lamps may be used for illumination only when electrical current is not available.—Department of Industrial Relations, Division of Factory and Building Inspection, Bul. No. 109, Ohio State Building Code, Workshops, Factories, Mercantile, and Office Buildings. November, 1929, sections 6, 22, pages 11, 17.

Enforcement practice.—At irregular intervals, inspectors of the Division of Factory Inspection inspect manufacturing and mercantile establishments for lighting, enforcing the provisions of the building code, and using the lighting code as a guide.

Enforcement agency.—Department of Industrial Relations, Columbus.

OKLAHOMA

Legal requirements.—Has a lighting code that is used as a recommended standard for lighting. (See pp. 24 to 44 of this report.)—Department of Labor, Bul. No. 3, Industrial Code Rules Relating to Lighting of Factories and Mercantile Establishments.

The law states that, when in the opinion of the factory inspector it is necessary, the workrooms, halls, and stairs leading to the workrooms shall be properly lighted. Applies to factories, workshops, and machine shops, foundries, laundries, manufacturing establishments, and such other places where labor is employed as the commissioner of labor may designate.—Revised laws, 1910, sections 3748, 3743.

Enforcement practice.—The three inspectors can not inspect each manufacturing and mercantile establishment once a year as directed in the code, and they have had to abandon the use of the foot-candle meter because its use required so much time that other parts of their work were neglected.

Enforcement agency.—Department of Labor, Oklahoma City.

OREGON

Legal requirements.—Has a lighting code. (See pp. 24 to 44 of this report.)—Code Governing Industrial Lighting in Places of Employment, 1919, Bureau of Labor.

This code is a regulation promulgated by the Bureau of Labor as directed by the following law: Applies to any place where any industry, trade, or business is carried on, or where any process or operation directly or indirectly relating to any industry, trade, or business is carried on, except private domestic service or agricultural pursuits which do not involve the use of mechanical power.

All passageways and other portions of places of employment and all moving parts of machinery which are not so guarded as to prevent accidents, where, on, or about which persons work or pass or may have to work or pass in emergencies, shall be kept properly and sufficiently lighted during working hours. The halls and stairs leading to the workrooms shall be properly and adequately lighted, and a proper and adequate light shall be kept burning by the owner or lessee in the public hallways near the stairs, upon the entrance floor, and upon the other floors on every work day in the year from the time when the building is open for use in the morning until the time it is closed in the evening, except in times when the influx of natural light shall make artificial light unnecessary. Such lights shall be so arranged as to insure their reliable operation when through accident or other cause the regular factory or workshop lighting is extinguished.

All workrooms in any place of employment shall be properly and adequately lighted during working hours. Artificial illuminants in every workroom shall be installed, arranged, and used so that the light furnished will at all times be sufficient and adequate for the work carried on therein, and so as to prevent unnecessary strain on the vision or glare in the eyes of the workers.

Working or traversed spaces in all places of employment as defined in this act shall be supplied during the time of use with artificial light in accordance with a schedule of minimum values which shall be determined as hereinafter specified; and when the natural light is less than the intensity so determined, the artificial light must be used.

Lamps must be so located or suitably shaded as to minimize glare.

All lamps and lighting appliances must be so installed in regard to height, spacing, reflectors, or other accessories as to secure a good distribution of light on the work, avoiding objectionable shadows and sharp contrasts of intensity. Emergency lamps shall be provided in the main aisles and in all stairways, passageways, and exits so as to afford sufficient guidance to provide the safe exit from said places of employment in case of emergency. Such lamps shall be in operation concurrently with the lighting and independent thereof.

The switching and controlling apparatus shall be so placed that at least pilot or night lights may be turned on at the main points of entrance.

The commissioner of labor and inspector of factories and workshops of the State of Oregon is hereby authorized to establish certain minimum values for lighting, which shall be deemed proper and adequate in accordance with the conditions set forth in this act. In arriving at what values shall be used in this schedule of minimum lighting, and such other rules as shall determine

definitely what shall constitute compliance with the provisions of this act; he shall be guided by the best engineering practice as set forth in the recommendations of "Illuminating Engineering Society." Before such schedule and rules, however, shall become effective, the Commissioner of Labor must, upon his own motion, appoint a commission of three persons, one to represent the manufacturing interests, one to represent the operating electrical workers, and one must be an electrical engineer. Notice of the public meetings of such commission shall be published in the leading newspapers of each county in the State, giving the time, place, and purpose of such meetings. The commission shall have power, after holding these public meetings, to establish, to rearrange, or to readjust the schedule of lighting values and rules as above set forth. These rulings or adjustments shall then become effective, 30 days after they have been made, and the commissioner of labor shall serve notice, in writing or by publication in the leading newspapers of each county in the State, of the rulings thus made and of the date upon which they become effective.

Any person, firm, or corporation who violates or does not comply with the provisions of this act or who shall fail or neglect to provide the necessary and proper illumination herein provided, within thirty (30) days after receiving written notice so to do by the commissioner of labor and inspector of factories and workshops, is guilty of a misdemeanor, and upon conviction shall be punished by a fine not exceeding the sum of fifty dollars (\$50), and that for the purposes of this act each day that such violation continues, or for each day such refusal continues, shall constitute a separate and distinct violation of this act.—Session Laws, 1919, ch. 181, secs. 1-9.

The Industrial Welfare Commission has an order applying to all occupations of women, requiring that: All rooms shall be properly and adequately lighted during working hours. Artificial illumination in every workroom shall be installed, arranged, and used so that the light furnished will be, at all times, sufficient and adequate for the work carried on therein, and prevent unnecessary strain on the vision or glare on the eyes of the worker.—Industrial Welfare Commission Order No. 22. Sanitary Code, sec. 3.

Enforcement practice.—There have been no funds available to provide for adequate enforcement of the lighting law and code, but the factory inspectors do check the lighting from time to time in certain places in industrial plants, using the foot-candle meter to determine the amount of illumination.

Enforcement agency.—Bureau of Labor, Salem.

PENNSYLVANIA¹⁰

Legal requirements.—Has a lighting code. (See pp. 24 to 44 of this report.)—Regulations for Industrial Lighting, Department of Labor and Industry.

The law requires that all workrooms, halls, and stairways be properly lighted. Applies to all manufacturing and mercantile establishments and other places of employment.—Pennsylvania Statutes, complete to 1920, sec. 13593.

Special rules for emergency lighting in certain factories and mercantile establishments where night work is performed more than 50 nights in any one year supplement the emergency lighting section of the lighting code.—Regulations for Protection from Fire and Panic, Construction, Installation, and Maintenance of Emergency Lighting Systems, Department of Labor and Industry.

Enforcement practice.—Lighting inspections are made in manufacturing and mercantile establishments by inspectors of the bureau of inspection in their regular inspections and in their special inspections where an accident has occurred. Foot-candle meters are available in each division office and some person in each division is trained to use them. They are used in such places as there appears to be reason to doubt that the lighting meets the requirements of the regulations. Two men in the main office, who are experts on lighting problems, give some instruction to the inspectors on lighting.

Enforcement agency.—Department of Labor and Industry, Harrisburg.

RHODE ISLAND

Legal requirements.—To provide adequate lighting is the duty of the proprietor of any factory or workshop. This does not cover mercantile establishments.—Session Laws, 1926, ch. 761, sec. 9.

¹⁰ In addition, lighting and the lighting code are referred to in many of the regulations for particular industries by the department of labor and industry. These are not included here.

Enforcement practice.—Inspections of lighting are made by the inspectors in their regular visits to factories and workshops. As they have 10,000 places under the factory inspectors' care, and only five inspectors, the inspector states that visits can not be made very often.

Enforcement agency.—Office of Factory Inspectors, Providence.

SOUTH CAROLINA

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Department of Agriculture, Commerce, and Industries, Columbia.

SOUTH DAKOTA

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Industrial Commissioner, Pierre.

TENNESSEE

Legal requirements.—Inspectors of factories and workshops are charged to carefully inspect for lighting.—Session Laws, 1915, ch. 170, sec. 9.

The Department of Labor has supplemented this requirement by a safety standard requiring that all work places, passageways, and storage spaces should be so well lighted that a person may easily see any dangers with which he might come in contact. Light that is sufficient is required in stairways, elevator cars, and on elevator landings.—Handbook of Industrial Safety Standards, Tennessee Department of Labor, Factory Inspection Division, pages 68, 5, 15, issued under authority of Session Laws, 1923, sec. 55, part 9.

Enforcement practice.—The factory inspectors inspect for lighting at least once a year in their inspection of manufacturing and mercantile establishments. Standards for proper lighting left to judgment of inspectors.

Enforcement agency.—Department of Labor, Nashville.

TEXAS

Legal requirements.—Lights shall be kept burning at all main stairs, stair landings, and elevator shafts in the absence of sufficient natural light in factories, mills, workshops, mercantile establishments (except those having seven or less female employees), laundries, or other establishments of a height of two stories or over.—Revised Civil Statutes, 1925, Art. 5176.

Enforcement practice.—Inspections are made for lighting once each year in manufacturing and mercantile establishments. The chief of the division of factory inspectors gives inspectors some training on lighting problems.

Enforcement agency.—Bureau of Labor Statistics, Austin.

UTAH

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Industrial Commission, Salt Lake City.

VERMONT

Legal requirements.—If the Commissioner of Industries finds that the lighting is injurious to the health of the persons employed or residing in a factory, mill, workshop, private works, or State institution which has shops or factories, he shall give written notice to the owner, proprietor, or other person in charge of such workshop or factory to make, within 30 days, such alterations or additions for the safety and protection of employees as said commissioner deems necessary.—General Laws, 1917, sec. 5847.

Enforcement practice.—The factory inspector inspects for lighting in manufacturing and mercantile establishments at least once a year, using his own best judgment about lighting that is injurious to the health of the persons employed.

Enforcement agency.—Office of the Commissioner of Industries, Montpelier.

VIRGINIA

Legal requirements.—When in the opinion of the commissioner of labor it is necessary, the workrooms, halls and stairs leading to the workrooms shall be properly lighted; and in cities of the first class, if deemed necessary by the commissioner of labor, a proper light shall be kept burning by the owner or lessee in the public hallways, near the stairs upon the entrance floor and upon the other floors, on every workday in the year from the time when the building is opened for use in the morning until the time it is closed in the evening, except at such times when the influx of natural light shall make artificial light unnecessary. Such lights shall be independent of the motive power of such factory. This applies to factories, shops, and manufacturing establishments where machinery is used. It does not cover mercantile establishments.—Virginia Code of 1930, annotated, ch. 75, sec. 1830.

Enforcement practice.—Inspections are made of lighting in manufacturing establishments by the factory inspectors. Although the law does not cover mercantile establishments, the factory inspectors or the inspector of the women's and children's division of the Department of Labor and Industry do note lighting in their inspections of mercantile establishments.

Enforcement agency.—Department of Labor and Industry, Richmond.

WASHINGTON

Legal requirements.—Has a lighting code. (See pp. 24 to 44 of this report.)—Safety Standards, effective January 1, 1924, Nos. 14–20, Department of Labor and Industries.

Also an order of the Industrial Welfare Committee.

Every room in any manufacturing or mercantile establishment in which women are employed shall be supplied with adequate natural or artificial light. Sufficient illumination shall be provided for each woman irrespective of her position on the floor space. Individual lamps shall be placed close to the work where necessary, and in such cases the lamps shall be provided with suitable opaque reflectors.—Industrial Welfare Committee Order No. 30, Working Conditions for Female Employees, sec. 1.

Enforcement practice.—Inspections of lighting are made in manufacturing and mercantile establishments by inspectors of the Division of Safety and of the Industrial Welfare Commission. The inspectors are trained on lighting problems by the department and are under the supervision of an electrical engineer.

Enforcement agency.—Department of Labor and Industries, Olympia.

WEST VIRGINIA

Legal requirements.—No legal requirements for general workroom lighting, but a proper light shall be kept burning by the owner or lessee in all main passageways, main hallways, at all main stairs, main stair landing and shafts, and in front of all passenger or freight elevators, upon entrance floors, and upon other floors, on every workday of the year, from the time that the building is open for use until it is closed, except at times when the influx of natural light shall make artificial light unnecessary. Passageways must be of ample width, well lighted, and free from obstruction. This applies to all factories, mercantile establishments, mills, or workshops.—Official Code of West Virginia, 1931, ch. 21, art. 3, sec. 6.

Enforcement practice.—Inspectors may issue orders on lighting.

Enforcement agency.—Bureau of Labor, Charleston.

WISCONSIN²¹

Legal requirements.—Has a lighting code. (See pp. 24 to 44 of this report.)—Industrial Lighting Code for Factories, Mills, Offices and Other Work Places; Third edition revised. Industrial Commissioner's Orders 2100 to 2118.

²¹ Several additional orders supplementing the basic lighting code are not included here.

The building code requires that in all places of employment all passageways and stairways when used at night shall have lights at the head and foot of each flight of stairs and at the intersections of all corridors and passageways. Where "B" fire escapes are required, such fire escapes shall be lighted whenever the stairways are required to be lighted. For red exit lights, see order 5132. All gas jets or gas lights in factories or workshops where combustible material is used shall be properly enclosed by globes or wire cages, or otherwise properly guarded.

Oil lamps shall not be used when gas or electricity is available.

Certain requirements are made for locating and protecting gas and oil lights. All electrical work shall conform to the Wisconsin State Electrical Code of the Industrial Commission.—Building Code, reprint, 1927, Industrial Commission of Wisconsin. Orders 5410, 5224, and 5225.

Enforcement practice.—Inspections of lighting are made in manufacturing and mercantile establishments by the factory inspectors. Foot-candle meters are used in any place in which there has been disagreement concerning lighting between the deputy and the owner or person in charge. The electrical engineer of the department is also called in if there is a decided difference of opinion. After inspectors have become familiar with the requirements of the lighting code, they are given instruction in its application by demonstrations and joint inspections with the electrical engineer.

Enforcement agency.—Industrial Commission, Madison.

WYOMING

Legal requirements.—None.

Enforcement practice.—None.

Enforcement agency.—Department of Labor and Statistics, Cheyenne.

PUBLICATIONS OF THE WOMEN'S BUREAU

[Any of these bulletins still available will be sent free of charge upon request]

- *No. 1. Proposed Employment of Women During the War in the Industries of Niagara Falls, N. Y. 16 pp. 1918.
- *No. 2. Labor Laws for Women in Industry in Indiana. 29 pp. 1919.
- No. 3. Standards for the Employment of Women in Industry. 8 pp. Fourth ed., 1928.
- No. 4. Wages of Candy Makers in Philadelphia in 1919. 46 pp. 1919.
- *No. 5. The Eight-Hour Day in Federal and State Legislation. 19 pp. 1910.
- No. 6. The Employment of Women in Hazardous Industries in the United States. 8 pp. 1921.
- No. 7. Night-Work Laws in the United States. (1919.) 4 pp. 1920.
- *No. 8. Women in the Government Service. 37 pp. 1920.
- *No. 9. Home Work in Bridgeport, Conn. 35 pp. 1920.
- *No. 10. Hours and Conditions of Work for Women in Industry in Virginia. 32 pp. 1920.
- No. 11. Women Street Car Conductors and Ticket Agents. 90 pp. 1921.
- *No. 12. The New Position of Women in American Industry. 158 pp. 1920.
- *No. 13. Industrial Opportunities and Training for Women and Girls. 48 pp. 1921.
- *No. 14. A Physiological Basis for the Shorter Working Day for Women. 20 pp. 1921.
- No. 15. Some Effects of Legislation Limiting Hours of Work for Women. 28 pp. 1921.
- No. 16. (See Bulletin 98.)
- No. 17. Women's Wages in Kansas. 104 pp. 1921.
- No. 18. Health Problems of Women in Industry. 6 pp. Revised, 1931.
- No. 19. Iowa Women in Industry. 73 pp. 1922.
- *No. 20. Negro Women in Industry. 65 pp. 1922.
- No. 21. Women in Rhode Island Industries. 73 pp. 1922.
- *No. 22. Women in Georgia Industries. 89 pp. 1922.
- No. 23. The Family Status of Breadwinning Women. 43 pp. 1922.
- No. 24. Women in Maryland Industries. 96 pp. 1922.
- No. 25. Women in the Candy Industry in Chicago and St. Louis. 72 pp. 1923.
- No. 26. Women in Arkansas Industries. 86 pp. 1923.
- No. 27. The Occupational Progress of Women. 37 pp. 1922.
- No. 28. Women's Contributions in the Field of Invention. 51 pp. 1923.
- No. 29. Women in Kentucky Industries. 114 pp. 1923.
- No. 30. The Share of Wage-Earning Women in Family Support. 170 pp. 1923.
- No. 31. What Industry Means to Women Workers. 10 pp. 1923.
- No. 32. Women in South Carolina Industries. 128 pp. 1923.
- No. 33. Proceedings of the Women's Industrial Conference. 190 pp. 1923.
- No. 34. Women in Alabama Industries. 86 pp. 1924.
- No. 35. Women in Missouri Industries. 127 pp. 1924.
- No. 36. Radio Talks on Women in Industry. 34 pp. 1924.
- No. 37. Women in New Jersey Industries. 99 pp. 1924.
- No. 38. Married Women in Industry. 8 pp. 1924.
- No. 39. Domestic Workers and Their Employment Relations. 87 pp. 1924.
- No. 40. (See Bulletin 98.)
- No. 41. Family Status of Breadwinning Women in Four Selected Cities. 145 pp. 1925.
- No. 42. List of References on Minimum Wage for Women in the United States and Canada. 42 pp. 1925.
- No. 43. Standard and Scheduled Hours of Work for Women in Industry. 68 pp. 1925.

* Supply exhausted.

- No. 44. Women in Ohio Industries. 137 pp. 1925.
- No. 45. Home Environment and Employment Opportunities of Women in Coal-Mine Workers' Families. 61 pp. 1925.
- No. 46. Facts About Working Women—A Graphic Presentation Based on Census Statistics. 64 pp. 1925.
- No. 47. Women in the Fruit-Growing and Canning Industries in the State of Washington. 223 pp. 1926.
- *No. 48. Women in Oklahoma Industries. 118 pp. 1926.
- No. 49. Women Workers and Family Support. 10 pp. 1925.
- No. 50. Effects of Applied Research Upon the Employment Opportunities of American Women. 54 pp. 1926.
- No. 51. Women in Illinois Industries. 108 pp. 1926.
- No. 52. Lost Time and Labor Turnover in Cotton Mills. 203 pp. 1926.
- No. 53. The Status of Women in the Government Service in 1925. 103 pp. 1926.
- No. 54. Changing Jobs. 12 pp. 1926.
- No. 55. Women in Mississippi Industries. 89 pp. 1926.
- No. 56. Women in Tennessee Industries. 120 pp. 1927.
- No. 57. Women Workers and Industrial Poisons. 5 pp. 1926.
- No. 58. Women in Delaware Industries. 156 pp. 1927.
- No. 59. Short Talks About Working Women. 24 pp. 1927.
- No. 60. Industrial Accidents to Women in New Jersey, Ohio, and Wisconsin. 316 pp. 1927.
- No. 61. The Development of Minimum Wage Laws in the United States, 1912 to 1927. 635 pp. 1928.
- No. 62. Women's Employment in Vegetable Canneries in Delaware. 47 pp. 1927.
- No. 63. (See Bulletin 98.)
- No. 64. The Employment of Women at Night. 86 pp. 1928.
- *No. 65. The Effects of Labor Legislation on the Employment Opportunities of Women. 498 pp. 1928.
- No. 66-I. History of Labor Legislation for Women in Three States. 136 pp. 1932.
- No. 66-II. Chronological Development of Labor Legislation for Women in the United States. Revised December, 1931. 176 pp. 1932.
- No. 67. Women Workers in Flint, Mich. 80 pp. 1929.
- No. 68. Summary: The Effects of Labor Legislation on the Employment Opportunities of Women. (Reprint of Chapter II of bulletin 65.) 22 pp. 1928.
- No. 69. Causes of Absence for Men and for Women in Four Cotton Mills. 24 pp. 1929.
- No. 70. Negro Women in Industry in 15 States. 74 pp. 1929.
- No. 71. Selected References on the Health of Women in Industry. 8 pp. 1929.
- No. 72. Conditions of Work in Spin Rooms. 41 pp. 1929.
- No. 73. Variations in Employment Trends of Women and Men. 143 pp. 1930.
- No. 74. The Immigrant Woman and Her Job. 179 pp. 1930.
- No. 75. What the Wage-Earning Woman Contributes to Family Support. 21 pp. 1929.
- No. 76. Women in 5-and-10-cent Stores and Limited-Price Chain Department Stores. 58 pp. 1930.
- No. 77. A study of Two Groups of Denver Married Women Applying for Jobs. 11 pp. 1929.
- No. 78. A Survey of Laundries and Their Women Workers in 23 Cities. 166 pp. 1930.
- No. 79. Industrial Home Work. 20 pp. 1930.
- No. 80. Women in Florida Industries. 115 pp. 1930.
- No. 81. Industrial Accidents to Men and Women. 48 pp. 1930.
- No. 82. The Employment of Women in the Pineapple Canneries of Hawaii. 30 pp. 1930.
- No. 83. Fluctuation of Employment in the Radio Industry. 66 pp. 1931.
- No. 84. Fact Finding with the Women's Bureau. 37 pp. 1931.
- No. 85. Wages of Women in 13 States. 213 pp. 1931.
- No. 86. Activities of the Women's Bureau of the United States. 15 pp. 1931.

- No. 87. Sanitary Drinking Facilities, with Special Reference to Drinking Fountains. 28 pp. 1931.
- No. 88. The Employment of Women in Slaughtering and Meat Packing. 210 pp. 1932.
- No. 89. The Industrial Experience of Women Workers at the Summer Schools, 1928 to 1930. 62 pp. 1931.
- No. 90. Oregon Legislation for Women in Industry. 40 pp. 1931.
- No. 91. Women in Industry. A Series of Papers to Aid Study Groups. 79 pp. 1931.
- No. 92. Wage-Earning Women and the Industrial Conditions of 1930. A Survey of South Bend. 84 pp. 1932.
- No. 93. Household Employment in Philadelphia. 88 pp. 1932.
- No. 94. State Requirements for Industrial Lighting. A Handbook for the Protection of Women Workers, Showing Lighting Standards and Practices. 65 pp. 1932.
- No. 95. Bookkeepers, Stenographers, and Office Clerks in Ohio, 1914 to 1929. 34 pp. 1932.
- No. 96. Women Office Workers in Philadelphia. 17 pp. 1932.
- No. 97. The Employment of Women in the Sewing Trades of Connecticut.—Preliminary Report. 13 pp. 1932.
- No. 98. Labor Laws for Women in the States and Territories. (Revision of Bulletin 63.) (In press.)
- No. 99. The Installation and Maintenance of Toilet Facilities in Places of Employment. (In press.)
- No. 100. The Effects on Women of Changing Conditions in the Cigar and Cigarette Industries. (In press.)
- Pamphlet—Women's Place in Industry in 10 Southern States. 14 pp. 1931.
- Annual Reports of the Director, 1919*, 1920*, 1921*, 1922, 1923, 1924*, 1925, 1926, 1927*, 1928*, 1929*, 1930*, 1931, 1932. (In press.)
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* Supply exhausted.

