

1 (b) A grade A dairy plant permit expires on April 30 annually and is not transferable between
2 persons or locations. A grade A dairy plant permit may be issued in the form of an endorsement
3 on a dairy plant license under s. ATCP 65.04(1).

4 **(15) GRADE A PERMIT EXEMPTIONS.** A grade A permit is not required under sub. (14) for any
5 of the following:

6 (a) A grade A receiving station or transfer station operated at the same location, and by the
7 same person, as a grade A processing plant covered by a permit under sub. (14).

8 (b) A grade A transfer station operated at the same location, and by the same person, as a
9 grade A receiving station covered by a permit under sub. (14).

10 **(16) GRADE A PERMIT APPLICATION.** An application for a grade A dairy plant permit shall be
11 made on a form provided by the department. A grade A permit application may be made in
12 conjunction with a dairy plant license application under s. ATCP 65.04(2).

13 **(17) SURCHARGE FOR OPERATING WITHOUT A GRADE A PERMIT.** An applicant for a grade A
14 dairy plant permit shall pay a permit surcharge of \$100 if the department determines that, within
15 365 days before to submitting the permit application, the applicant operated the dairy plant as a
16 grade A dairy plant without a grade A permit in violation of sub. (14). Payment of the surcharge
17 does not relieve the applicant of any other civil or criminal liability that results from the
18 operation of a grade A dairy plant without a grade A permit, but does not constitute evidence of
19 any violation of law.

20 **(18) ACTION ON GRADE A PERMIT APPLICATION; DEADLINE.** The department shall grant or
21 deny a permit application under sub. (16) within 40 days after the department receives a
22 complete application, or before the expiration of any temporary permit issued under sub. (19),
23 whichever occurs later.

1 **(19) TEMPORARY GRADE A PERMIT.** The department may issue a temporary grade A permit
2 to an applicant under sub. (16) pending final action on that person's permit application. A
3 temporary permit may be issued for a period of not more than 40 days, and may not exceed the
4 term of the dairy plant license or temporary license. If the department denies a permit
5 application before the term of the temporary permit expires, the temporary permit is
6 automatically terminated when the applicant receives notice of the denial. The department may
7 not issue a temporary permit in response to a permit renewal application by the holder of an
8 existing permit.

9 **(20) PREREQUISITES FOR GRADE A PERMIT.** The department may not issue or renew a grade
10 A dairy plant permit, or issue a temporary permit under sub. (19), unless all of the following
11 conditions are met:

12 (a) The permit applicant holds a dairy plant license under s. ATCP 65.04, or the department
13 issues the permit and license simultaneously. The department may issue a temporary grade A
14 permit under sub. (19) to an applicant holding a temporary dairy plant license under s. ATCP
15 65.04 (5), or may issue the temporary permit and temporary license simultaneously.

16 (b) The division inspects the dairy plant if the dairy plant is not currently covered by a grade
17 A dairy plant permit.

18 (c) The applicant pays any surcharge, set forth in a statement from the department, that is
19 due and payable by the applicant under sub. (9). The department shall refund a surcharge paid
20 under protest if the department determines that the surcharge was not due and payable under sub.
21 (9).

22 **(21) GRADE A STANDARDS.** A grade A dairy plant shall comply with standards applicable to
23 the receipt, testing, transfer, processing, and distribution of grade A milk and grade A milk

1 products under this chapter. A grade A dairy plant may not receive, transfer, or process grade B
2 milk unless the receipt, transfer, or processing is authorized by the division in writing.

3 **Subchapter II – Dairy Farms**

4 **ATCP 65.06 Milking barn or parlor.** All milking operations on a dairy farm shall be
5 conducted in a milking barn or parlor, which shall be constructed and maintained in compliance
6 with the following requirements:

7 **(1) FLOORS AND GUTTERS; CONSTRUCTION.** Except as authorized by the division in writing,
8 floors, gutters and gutter covers in milking barns and parlors shall comply with all of the
9 following requirements:

10 (a) They shall be constructed of concrete or other materials that are equally impervious and
11 cleanable.

12 (b) They shall be constructed and maintained so they can be kept clean.

13 (c) They shall be sloped to drain properly and shall be free of excessive breaks or worn areas
14 which may allow pooling of liquid wastes. Floors and gutters constructed after July 1, 1989,
15 shall have a slope of at least one inch per 10 feet.

16 **(2) MANURE HANDLING SYSTEMS.** Gravity flow manure handling systems and liquid manure
17 storage under milking barns shall comply with applicable standards contained in PMO Appendix
18 C, "Dairy Farm Construction Standards and Milk Production."

19 **Note:** Copies of the PMO, including Appendix C, are on file with the division and the legislative reference
20 bureau. Copies are available online at
21 www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/milk.
22

23 **(3) WALLS AND CEILINGS; CONSTRUCTION.** Walls and ceilings in milking barns and parlors
24 shall be constructed and maintained so that they can be kept clean. Walls and ceilings shall be
25 painted, whitewashed or otherwise finished so that they are light colored and easy to clean.

26 Ceilings shall be constructed and maintained to prevent dust and chaff from entering the milking

1 barn or parlor from above. The wall finish and wall cleaning requirements under this subsection
2 do not apply to seasonal milking parlors constructed without walls

3 (4) LIGHTING. Natural or artificial lighting, or both, shall be provided in milking barns and
4 parlors to ensure adequate illumination for daytime and nighttime milking operations. Except
5 where additional lighting is required for milking parlors under sub. (10), there shall be at least 10
6 foot-candles of illumination in all working areas where milking operations are being performed.

7 (5) VENTILATION. Ventilation in milking barns and parlors shall be adequate to prevent
8 visible condensation on walls and ceilings, and to prevent excessive odors.

9 (6) ANIMALS EXCLUDED. No swine, fowl, or non-milking livestock may be housed in, or
10 allowed to enter a milking barn or parlor. Nonmilking livestock shall be confined in stalls,
11 stanchions or pens. Milking areas shall be kept free of excrement from nonmilking livestock.

12 (7) MAINTENANCE AND CLEANLINESS; GENERAL. The interior of every milking barn or parlor,
13 and all areas used in connection with milking operations, shall be kept clean and in a good state
14 of repair. Floors, gutters, walls, ceilings, animal confinement facilities, pipelines and equipment
15 shall be kept free of accumulated litter and filth. Bedding material shall be clean and dry. Milk
16 stools, surcingles and anti-kickers shall be kept clean, and shall be stored above the floor when
17 not in use.

18 Note: To comply with this subsection, producers should remove manure from milking barns daily, and from
19 milking parlors after every milking.
20

21 (8) FEED STORAGE AND HANDLING. Dust-tight covered containers or separate storage
22 facilities shall be used to store ground, chopped or concentrated feed. Feed may be stored in the
23 milking portion of the barn only in a manner that does not increase the dust content of the air,
24 attract flies or interfere with the cleaning of the floor. Open feed dollies or carts may be used for
25 distributing feed, but not for storing feed in the milking barn.

1 (9) OVERCROWDING PROHIBITED. Areas used for milking operations shall not be
2 overcrowded.

3 **Note:** Evidence of overcrowded conditions may include inadequate ventilation, excessive odors, livestock in
4 walks or feed alleys, or nonmilking livestock tied between milking animals in a milking line.
5

6 (10) MILKING PARLOR; ADDITIONAL REQUIREMENTS. (a) *Cleaning and storage of C-I-P*
7 *milking equipment.* C-I-P milking equipment may be cleaned, sanitized and stored in a milking
8 parlor if all of the following conditions are met:

9 1. There are at least 30 foot-candles of illumination in all areas of the milking parlor where
10 C-I-P milking equipment is cleaned, sanitized or stored.

11 2. Doorways to and from the milking parlor are provided with tight-fitting solid doors which
12 are kept closed when the doorways are not in use.

13 3. Openings to the milking parlor are protected against entry by insects, rodents and other
14 pests.

15 4. No animals are housed in the milking parlor at any time.

16 5. Liquid wastes from milking parlor operations are drained and removed in a sanitary
17 manner, so that there are no liquid waste accumulations in the milking parlor.

18 6. C-I-P milking equipment, if cleaned, sanitized or stored in the milking parlor, is designed,
19 installed, handled and stored so that milk contact surfaces are protected from contamination at all
20 times. Cleaning, handling and storage shall comply with applicable requirements under s. ATCP
21 65.14.

22 (b) *Manual cleaning of milk contact surfaces prohibited in milking parlor.* If manual
23 cleaning of milk contact surfaces is necessary, the milk contact surfaces shall be manually
24 cleaned in the milkhouse. Milk contact surfaces may not be manually cleaned in a milking
25 parlor.

1 (c) *Prep stalls; hot water supply.* If milking animals are hosed clean in a milking parlor prep
2 stall prior to milking, rather than being manually cleaned at the milking stanchions, hot water
3 under pressure shall be supplied to the prep stall and used for cleaning purposes. There shall be
4 an adequate supply of hot water so that all milking animals processed through the prep stall can
5 be fully cleaned without depleting the availability of hot water for other milking parlor or
6 milkhouse operations.

7 **(11) DRUG STORAGE.** No drug or medicinal item may be kept in a milking barn or parlor
8 unless it is intended or prescribed for use on dairy animals. Drugs and medicinal items stored in
9 a milking barn or parlor shall be stored above the floor, on racks or in a cabinet. Drugs and
10 medicinal items shall be stored in a manner which prevents the contamination of milk, or
11 equipment and utensils coming in contact with milk. Drugs and medicinal items shall be clearly
12 labeled to indicate their identity and intended use. Prescription drugs shall be labeled as
13 provided under s. ATCP 65.20 (5). Drugs and medicinal items intended solely for non-lactating
14 animals shall be kept separate from those used on lactating animals.

15 **ATCP 65.08 Milkhouse. (1) REQUIREMENT.** Every dairy farm shall have a milkhouse.
16 Except as provided in s. ATCP 65.16 (5), a milk producer shall cool and store milk in the
17 milkhouse. A milkhouse shall be separate from a milking barn or parlor, but may share common
18 walls with a milking barn or parlor. All milking equipment and utensils shall be cleaned,
19 sanitized and stored in the milkhouse. This does not apply to C-I-P milk pipelines which are
20 mechanically cleaned in place in a milking barn or parlor, or to C-I-P milking equipment which
21 is mechanically cleaned and stored in a milking parlor under s. ATCP 65.06 (10) (a).

22 **(2) ACCESS TO MILKHOUSE.** Every access driveway and every access door to the milkhouse
23 shall be located in such a manner that neither a vehicle nor a person traveling to the milkhouse

1 must pass through an animal walkway, holding area or yard where excessive animal waste may
2 accumulate on the ground near these access areas.

3 (3) CONSTRUCTION. (a) *Floors.* A milkhouse floor shall be constructed of concrete or one or
4 more other impervious materials, and shall be easily cleanable. This requirement does not
5 prohibit construction with anti-slip floor surfaces which are easily cleanable. The floor shall be
6 sloped for proper drainage to a floor drain. Floor drains shall be readily accessible. A floor drain
7 shall be equipped with a trap if the floor drain is connected to a sanitary sewer system.

8 (b) *Walls and ceilings.* Milkhouse walls and ceilings shall be constructed and finished so that
9 they are impervious to water, and are light colored and easily cleanable.

10 (c) *Doors and windows.* A milkhouse shall not open directly into a barn, stable or milking
11 parlor, or into a room used for domestic purposes unless the opening is equipped with a tight-
12 fitting, self-closing and solid door. All milkhouse external openings shall be screened or
13 otherwise protected against entry of insects, rodents or other pests. External doors and windows
14 shall be tight-fitting, and shall be kept closed during dusty weather. External doors shall be self-
15 closing. All swinging screen doors on the milkhouse shall open outward.

16 (d) *Lighting.* Natural or artificial lighting, or both, shall be provided in a milkhouse to ensure
17 adequate illumination for daytime and nighttime operations. There shall be at least 30 foot-
18 candles of illumination in all working areas of the milkhouse. Artificial lights located over a
19 bulk tank shall be shatterproof, or effectively shielded to protect milk from contamination with
20 broken glass.

21 (e) *Ventilation.* Ventilation in a milkhouse shall be adequate to prevent excessive odors, and
22 adequate to prevent visible condensation on floors, walls, ceilings, clean equipment, and clean

1 utensils. Vents shall be screened, and shall be located and maintained to prevent contamination
2 of bulk tanks or clean equipment and utensils.

3 (f) *Water heating capacity.* Hot water capacity shall be adequate for all milkhouse
4 operations. Hot water heaters or hot water supply systems shall have a capacity of at least 10
5 gallons for washing equipment and utensils. The division may authorize alternative systems,
6 including heat recovery and continuous flow systems, which provide adequate hot water for all
7 milkhouse operations. Authorization shall be in writing and valid for five years. Re-
8 authorization for each subsequent five-year period shall be obtained in writing from the division.

9 (g) *Wash and rinse vat.* A milkhouse shall be equipped with a two-compartment wash and
10 rinse vat for cleaning equipment and utensils. The vat shall be served by potable hot and cold
11 running water from a faucet or faucets located directly over the vat. Water shall enter and leave
12 the vat by means which preclude splash. A vat designed to hold cleaning or sanitizing solutions
13 drawn through C-I-P milking equipment may serve as one compartment of a two-compartment
14 wash and rinse vat under this paragraph, provided that the C-I-P inflation rack and all C-I-P
15 milking equipment are completely removed from the vat while other equipment and utensils are
16 being washed, rinsed and sanitized in the vat.

17 (h) *Handwashing facility.* A milkhouse shall be equipped with a fixed handwashing facility
18 which is separate from the wash and rinse vat under par. (g). The handwashing facility shall be
19 served by potable hot and cold running water from a faucet or faucets located directly over the
20 facility. Water shall enter and leave the handwashing facility by means which preclude splash.
21 Single service sanitary towels and soap shall be available at all times for use at the handwashing
22 facility. A handwashing facility may be located in a room immediately adjacent to the
23 milkhouse, provided that it is readily accessible from the milkhouse. This paragraph does not

1 apply to licensed milk producers who do not hold a grade A producer permit but operate a dairy
2 farm on which the currently used bulk tank was installed prior to January 1, 1979, or on which
3 milk is stored and cooled only in cans.

4 (i) *Bulk tank hose port.* If a bulk tank is used to receive and hold milk in a milkhouse, the
5 milkhouse shall have a hose port opening in the outside wall to permit the removal of milk from
6 the bulk tank. The hose port opening shall be at least 6 inches above the floor of the milkhouse,
7 and shall be equipped with a tight-fitting door which shall be kept closed except when the hose
8 port is in use. A paved surface of concrete or other readily cleanable material shall be installed
9 adjacent to the outside wall of the milkhouse, immediately under the bulk tank hose port. The
10 surface shall cover sufficient ground area to protect the milk hose from ground contamination
11 and be at least a 4 foot x 4 foot square.

12 (4) MAINTENANCE AND SANITATION. The floors, walls, ceilings, windows, hose port
13 assembly, and all equipment of a milkhouse shall be kept clean and in a good state of repair.
14 Liquid wastes from milkhouse operations shall be drained and removed in a sanitary manner.
15 Equipment and utensils shall be cleaned and maintained in compliance with s. ATCP 65.12. A
16 milkhouse shall be kept free of insects, rodents and other pests. Animals shall be kept out of the
17 milkhouse at all times. Potential sources of milk contamination, including materials which may
18 attract or harbor pests, shall be excluded from the milkhouse.

19 (5) STORAGE. (a) *General.* No equipment, supplies or other articles may be stored in a
20 milkhouse, unless the articles are used in milkhouse operations. Articles stored in a milkhouse
21 shall be stored above the floor, on racks or in a cabinet. Articles shall be stored in a manner that
22 prevents contamination of milk, and equipment and utensils coming in contact with milk.

23 **Note:** Washing machines, laundry dryers, and pasteurizers used to prepare milk-replacement formula for calves
24 shall not be stored in the milkhouse.
25

1 (b) *Drugs and medicinal items.* No drug or medicinal item may be kept in a milkhouse
2 unless it is intended or prescribed for use on dairy animals. If drugs or medicinal items are kept
3 in a milkhouse, they shall be stored in an enclosed cabinet, separate from all other articles stored
4 in the milkhouse. Drugs and medicinal items shall be clearly labeled to indicate their identity
5 and intended use, and prescription drugs shall be labeled as provided under s. ATCP 65.20 (5).
6 Drugs and medicinal items intended solely for treatment of non-lactating milking animals shall
7 be kept separate from those used for treatment of lactating milking animals.

8 (c) *Pesticides.* No pesticides, except for sanitizers, germicides, disinfectants and other
9 pesticides labeled and used for routine milkhouse sanitation purposes, may be stored in a
10 milkhouse. If pesticides are kept in a milkhouse, they shall be stored in a manner that precludes
11 contamination of milk and milk handling equipment.

12 **ATCP 65.10 Dairy farm water supply. (1) GENERAL.** An adequate supply of potable water
13 shall be supplied under pressure for milkhouse and milking operations. Water used for
14 milkhouse and milking operations, including water used to cool milk in a plate or tubular cooler,
15 shall be potable. Potable water shall comply with the bacteriological drinking water standards
16 under s. NR 809.30.

17 **Note:** A properly designed and installed water supply tank which utilizes static head pressure to provide potable
18 running water to the milkhouse is minimally adequate to comply with this paragraph.
19

20 **(2) BACKFLOW PROTECTION; CROSS-CONNECTIONS.** A potable water supply system on a
21 dairy farm shall be designed, constructed, installed and maintained to prevent contamination of
22 the potable water supply through backflow, backsiphonage, cross-connections or any other
23 connection to the potable water supply system. An adequate air gap shall be maintained between
24 every potable water outlet and the flood rim of the fixture which it supplies, and between the

1 potable water outlet and every other source of potential contamination, unless alternative
2 protection is approved under s. SPS 382.41.

3 (3) WELL CONSTRUCTION. Wells used to supply water for milkhouse and milking operations
4 on dairy farms shall comply with ch. NR 810, 811 or 812 in the case of a community water
5 system.

6 (4) WATER TRANSPORTED TO DAIRY FARM. If water in containers or tanks is transported to a
7 dairy farm for milkhouse or milking operations, the containers and tanks shall be sealed and
8 protected from contamination. The containers and tanks shall be thoroughly cleaned and
9 sanitized before being filled with potable water for use at the dairy farm. A sanitary cleaned and
10 sanitized pump, hose and fittings shall be used to transfer water from transport containers and
11 tanks to previously cleaned and sanitized storage tanks at the dairy farm, so that the water is not
12 contaminated during transfer.

13 (5) WATER QUALITY TESTING BY DAIRY PLANT. A dairy plant operator shall do all of the
14 following for each milk producer from whom the dairy plant operator procures milk:

15 (a) Sample the milk producer's water supply at least once every two years. If the water
16 supply system has more than one well, water from each well shall be sampled. The water sample
17 from each well shall be taken from water before it has flowed into a pressure tank or any water
18 treatment equipment.

19 (b) Sample the milk producer's water supply whenever the milk producer installs, alters or
20 repairs the water supply system.

21 (c) Sample any transported water supply used by the milk producer at the point of use, at or
22 before first use and monthly thereafter.

1 (d) Have each water sample under this paragraph analyzed at a laboratory that is certified
2 under ch. ATCP 77 to perform water quality analyses. The laboratory shall analyze the water
3 samples for compliance with the microbiological drinking water standards under s. NR 809.30.
4 The dairy plant operator shall submit each water quality analysis result to the division within 30
5 days after the dairy plant receives the water quality analysis result. If the analysis of any water
6 sample indicates that the water supply of a dairy farm may be unsafe, the dairy plant operator,
7 within 3 business days of the water quality analysis result, shall report the analysis result to the
8 division and resample the water supply and have it analyzed.

9 (6) RECIRCULATING WATER SYSTEM. (a) A milk producer may use re-circulated water in a
10 plate cooler to cool milk on a dairy farm if all of the following apply:

11 1. The recirculated water originates from a safe source that complies with ch. NR 810, 811 or
12 812.

13 2. The recirculated water meets the microbiological standards of s. NR. 809.30 at all times.

14 3. The recirculated water is protected from contamination.

15 4. The coolant used in the water recirculation system is food or pharmaceutical grade, is non-
16 toxic, meets the specifications for propylene glycol in 21 CFR 184.1666, and does not contain
17 coliform bacteria as determined by sampling and analysis done at least semi-annually by the
18 dairy plant operator.

19 5. The dairy plant operator who procures milk from the milk producer tests the recirculated
20 water for bacterial contamination at least semi-annually.

21 (b) If a recirculating water system under par. (a) becomes contaminated, the milk producer
22 shall stop using the system until all the following conditions are met:

1 1. The milk producer eliminates the contamination source and treats the recirculated water to
2 make it potable.

3 2. The dairy plant operator who procures milk from the milk producer retests the recirculated
4 water to determine whether the contamination is eliminated.

5 3. Retesting shows that the recirculated water complies with the bacteriological standards
6 under par. (c).

7 (c) Recirculated water shall meet all the following bacteriological test standards:

8 1. The most probable number (MPN) of coliform organisms shall be less than 1.1 per 100 ml.
9 as determined using the multiple tube fermentation technique, or less than 1 per 100 ml. as
10 determined using the membrane filter technique.

11 2. Bacteriological testing using the membrane filter technique shall show not more than 200
12 total bacteriological colonies per 100 ml.

13 3. Bacteriological testing using a heterotrophic plate count technique shall show not more
14 than 500 colonies per ml.

15 (7) WATER RECLAIMED FROM HEAT EXCHANGE EQUIPMENT. (a) Except as provided in par.

16 (b), a milk producer may re-use, for milking operations, potable water previously used in a heat
17 exchanger or compressor if all of the following conditions are met:

18 1. The water is stored in a cleaned and sanitized vessel that is constructed of non-
19 contaminating material and is designed to protect the water supply from contamination. The
20 storage vessel shall have a drain and access point that allow for cleaning and sanitizing.

21 2. There is no cross-connection between the potable re-used water and any potential
22 contamination source or potentially unsafe water supply.

1 3. There are no submerged inlets through which the potable re-used water may be
2 contaminated.

3 4. The water is of satisfactory organoleptic quality and has no off-flavors or odors.

4 5. The water complies with the microbiological drinking water standards in s. NR 809.30.

5 6. The dairy plant operator who procures milk from the milk producer collects and analyzes
6 samples of the re-used water supply before the milk producer first uses the water for milking
7 operations, and at least semi-annually thereafter.

8 7. Any chemicals used to suppress bacterial growth, off-tastes and odors are registered for
9 that use with the U.S. environmental protection agency. Chemicals may not contaminate milk.
10 A milk producer who uses any chemical to suppress bacterial growth, off-tastes or odors shall
11 comply with label instructions, and shall routinely monitor chemical concentrations in treated
12 water.

13 8. Sanitizers used to sanitize equipment, utensils, backflush systems, or teats of milking
14 animals shall be chemical sanitizers that comply with 21 CFR 178.1010, are registered with the
15 U.S. environmental protection agency, and are thereby suitable for use on food contact surfaces.
16 An approved sanitizer may be added by an automatic metering device that is located downstream
17 from the storage vessel but upstream from the end-use application of the sanitizer.

18 (b) Water obtained directly from the discharge of a raw milk heat exchanger after a milking
19 may be used once to pre-rinse dairy equipment including milk lines, milking claw assemblies
20 and milk receivers if all of the following apply:

21 1. The water is collected directly from the heat exchanger into a cleaned and sanitized wash
22 vat or utensil sink.

23 2. The water piping system complies with s. ATCP 65.10 (2).

1 3. After pre-rinse use, the water is discharged to waste.

2 **Note:** Paragraph (b) does not prevent the use of heat exchanger discharge water for nonpotable uses involving
3 no contact with potable water, milk, milk contact surfaces or potable water contact surfaces. Before using or
4 discharging heat exchanger discharge water, contact the Division of Water, Bureau of Drinking Water and Ground
5 Water, at the Department of Natural Resources, P.O. Box 7921, Madison, WI 53707, telephone 608-266-0821 or
6 TTY access via relay — 711 or <http://www.dnr.state.wi.us/environmentprotect/water.html>.

7
8 **ATCP 65.12 Equipment and utensils. (1) CONSTRUCTION; GENERAL.** Equipment and
9 utensils shall be constructed of smooth, non-absorbent, corrosion-resistant and non-toxic
10 materials. Equipment and utensils shall be designed and constructed so that they can be easily
11 cleaned and shall be durable under repeated conditions of use. Surfaces shall be free of breaks
12 and corrosion. Joints and seams shall be smooth and flush. Milk pails used for hand milking and
13 stripping shall be seamless. Multiple-use woven material shall not be used for straining milk.
14 Milking and milk handling systems shall comply with s. ATCP 65.14.

15 **(2) MILK CONTACT SURFACES; CONSTRUCTION.** Milk contact surfaces of equipment and
16 utensils shall be constructed of smooth, non-toxic and non-absorbent materials. Only the
17 following materials may be used on milk contact surfaces, unless another material is specifically
18 authorized by the division in writing:

19 (a) Stainless steel of the American Iron and Steel Institute 300 Series, or an equally
20 corrosion-resistant metal.

21 (b) Heat resistant glass.

22 (c) Plastic, rubber or rubber-like materials which are fat resistant and insoluble; which are
23 resistant to scratching, scoring, decomposition, crazing, chipping and distortion under normal use
24 conditions; which do not impart chemicals, flavor or odor to milk; and which maintain their
25 original properties under repeated and prolonged use.

26 **(3) MAINTENANCE.** Equipment and utensils shall be kept in good repair, and shall be readily
27 accessible for inspection by the division upon request.

1 (4) CLEANING. Equipment and utensils shall be kept clean. Utensils and milk contact
2 surfaces of equipment shall be rinsed immediately after each use, and then washed with an
3 effective detergent and rinsed clean. C-I-P equipment shall be pre-washed with warm water
4 before being cleaned with a detergent solution, according to manufacturer's instructions.

5 (5) SANITIZING. After being cleaned and rinsed, utensils and milk contact surfaces of
6 equipment shall be sanitized before being used.

7 (6) STORAGE. Equipment and utensils, unless stored in sanitizing solutions, shall be handled
8 and stored in a manner which will ensure complete drainage and protection from contamination
9 before use.

10 (7) SINGLE SERVICE ARTICLES. Single-service articles shall be clean and sanitary, and shall
11 be packaged, handled and stored in a sanitary manner. Single-service articles shall be stored in
12 their original containers inside a dispensing cabinet. Single service articles may not be reused.

13 **ATCP 65.14 Milking and milk handling systems. (1) SANITARY REQUIREMENTS;**

14 GENERAL. Milking and milk handling systems shall be of sanitary design and construction, and
15 shall be installed and maintained for sanitary operation. Pressurized air that contacts a milk or
16 milk contact surface shall be clean, safe and free of contaminants. The system used to generate
17 and supply pressurized air shall comply with "3-A Accepted Practices for the Design,
18 Fabrication and Installation of Milking and Milk Handling Equipment, 606-05." Milk contact
19 surfaces shall be accessible for inspection. If it is necessary to disassemble any portion of a
20 milking or milk handling system in order to inspect a milk contact surface, all tools needed for
21 the disassembly shall be readily available in the milkhouse.

22 **Note:** Guidelines for sanitary design and construction of milking and milk handling systems are set forth in the
23 "3-A Accepted Practices for the Design, Fabrication and Installation of Milking and Milk Handling Equipment,"
24 606-05, as amended effective November 2002, published by 3-A Sanitary Standards, Inc., 6888 Elm Street, Suite
25 2D, McLean, VA 22101-3850, telephone (703) 790-0295, website www.3-a.org. Milking and milk handling
26 systems manufactured in compliance with the "3-A Accepted Practices" meet the sanitary design and construction

1 requirements of this subsection. Copies of the "3-A Accepted Practices" are on file with the division and the
2 legislative reference bureau. Copies may be obtained from 3-A Sanitary Standards, Inc. Online Store," at
3 <http://www.techstreet.com>.
4

5 (2) MILK CONTACT SURFACES; CONSTRUCTION. Milk contact surfaces of milking and milk
6 handling systems shall be constructed of smooth, nontoxic and nonabsorbent materials.
7 Materials shall be of the following types, unless another material is specifically authorized by the
8 division in writing:

9 (a) Stainless steel of the American Iron and Steel Institute 300 series, or an equally corrosion
10 resistant metal;

11 (b) Heat resistant glass; or

12 (c) Plastic, rubber or rubber-like materials which are fat resistant and insoluble; which are
13 resistant to scratching, scoring, decomposition, crazing, chipping and distortion under normal use
14 conditions; which do not impart chemicals, flavor or odor to milk; and which maintain their
15 original properties under repeated use conditions.

16 (3) MILK PIPELINES. (a) Milk contact surfaces of permanently mounted milk pipelines shall
17 be constructed of stainless steel or an equally corrosion resistant metal, or of heat resistant glass.
18 Plastic or rubber-like materials may be used for pipeline gaskets, connections and sealing
19 applications, but not for other purposes. Paper gaskets are prohibited.

20 (b) All joints of permanently mounted milk pipelines, including joints in solution lines, shall
21 be welded or equipped with fittings designed for C-I-P. Welded joints shall be smooth and free
22 of pits, cracks or other defects. Removable fittings shall be designed to form substantially flush
23 interior joints. Ferrules shall be properly faced and reamed.

24 (c) Permanently mounted pipelines shall be supported at intervals of not more than 10 feet so
25 that the pipelines remain in constant alignment and position. Permanently mounted pipelines
26 shall be self-draining, and shall have a minimum slope of one inch per 10 feet. The support

1 system shall be designed and constructed to prevent electrolytic reactions between supports and
2 pipelines. Pipeline supports shall be mounted on the floor, except as authorized by the division in
3 writing.

4 (d) Milk pipeline systems shall be designed and constructed so that cleaning, rinsing and
5 sanitizing solutions cannot enter the pipeline while milk is being transferred through the pipeline.

6 (4) NON-PIPELINE SYSTEMS. If milk from milking animals is initially collected in a portable
7 transfer receptacle and pumped to the milkhouse through a flexible tube, rather than being
8 pumped directly to the milkhouse through a permanently mounted pipeline, the transfer
9 receptacle and tube system shall comply with the following requirements:

10 (a) The portable transfer receptacle shall be constructed of stainless steel or an equally
11 corrosion resistant metal, and shall have an overlapping self-closing cover. The receptacle shall
12 be supported off the floor on a cart or mobile structure which can be easily cleaned.

13 (b) The tube used to transfer milk from the portable transfer receptacle to the milkhouse shall
14 consist of a single length of transparent tubing material. The milk transfer tube shall be
15 supported off the floor at all times. The interior milk contact surface of the transfer tube shall be
16 mechanically cleaned and sanitized, and dried after each use. The opening through which the
17 milk transfer tube enters the milkhouse shall be kept closed when the tube is not in use. A milk
18 transfer tube shall not be left suspended in a milking barn or parlor between uses, but shall be
19 stored in the milkhouse.

20 (5) MILKING EQUIPMENT. (a) Surfaces of milking equipment, including surfaces of milker
21 claws, inflations, weigh jars, meters, milk hoses, milk receivers, and milk pumps, shall be
22 smooth and readily amenable to cleaning and sanitizing by mechanical or manual methods. If
23 thorough cleaning requires the removal of any part, that part shall be easily removable. Milking

1 equipment shall be designed and constructed so that milk, milk cleaning solutions, rinsing
2 solutions, and sanitizing solutions will drain completely from the equipment.

3 (b) Milking equipment which deposits milk into a bucket or container, rather than into a
4 permanently mounted pipeline, shall be equipped with a check valve or other device which
5 prevents moisture and contaminants from entering the milk through the temporary creation of
6 vacuum. The moveable portion of the check valve shall consist of a single piece, or pieces
7 which are permanently and completely bonded to each other.

8 (c) Automatic milking installations, or robotic milking systems, shall comply with Appendix
9 Q of the PMO.

10 (6) REVIEW OF PLANS. (a) Before installing, reconstructing or extensively altering a bulk
11 tank, milking system, milk handling system, milk house, milking parlor, or dairy farm water
12 supply system, the installer shall on behalf of the milk producer submit plans to the division for
13 review. The department shall charge a fee of \$25 under s. 93.06 (1w), Stats., to recover costs for
14 providing the review service. The division shall return the plans, together with any comments or
15 objections, within 14 days after the plans are received by the division. No review is required for
16 a portable transfer receptacle or its appurtenances.

17 (b) No manufacturer or distributor of milking or milk handling systems may sell, or distribute
18 for sale in this state, any portion of a milking or milk handling system unless specifications or
19 prototype equipment are first reviewed by the division. Within 30 days after specifications or
20 prototype equipment are received by the division, the division shall return them with any
21 comments or objections. The division may require field testing of the equipment prior to sale if
22 the division finds that field testing is necessary to determine whether the requirements of this
23 section are met. Field testing shall be conducted under conditions prescribed by the division.

1 (c) Plans and specifications submitted under this subsection shall be sufficiently detailed to
2 permit review by the division within the time periods specified under this subsection.

3 (7) CERTIFICATION OF COMPLIANCE BY INSTALLER. A person who installs, reconstructs or
4 extensively alters a milking system, milk handling system, milkhous, milking parlor, or dairy
5 farm water supply system shall certify to the owner of the system that the system has been
6 installed or modified in compliance with this section, and in compliance with the plans filed with
7 the division under sub. (6) (a). The installer, immediately after installing or modifying the
8 system, shall provide to the milk producer and the division a signed written statement certifying
9 compliance. The milk producer shall post a copy of the certificate in the milkhous for at least
10 12 months after it is provided to the milk producer.

11 **ATCP 65.16 Bulk tanks and bulk transport containers. (1) BULK TANK LOCATION.** If a
12 bulk tank is used to receive, cool or store milk on a dairy farm, the bulk tank shall be installed in
13 the milkhous. A bulk tank may be installed so that a portion of the bulk tank protrudes through
14 the wall of a milkhous, provided that all bulk tank openings are located inside the milkhous.
15 Agitator seals, other than weatherproof agitator seals approved in writing by the division, shall
16 be located inside the milkhous. Adequate clearance shall be maintained on the top and all sides
17 of a bulk tank to permit effective cleaning, sanitizing and maintenance of the bulk tank. No bulk
18 tank opening may be located directly under a ventilator. No bulk tank may be located directly
19 over a floor drain.

20 **Note:** Clearance of at least 24 inches on the top and the milk outlet side of the bulk tank, and 18 inches on all
21 other sides of the bulk tank, is adequate to comply with this subsection. No clearance is required for that portion of a
22 bulk tank which protrudes through the wall of a milkhous.
23

24 (2) BULK TANK CONSTRUCTION. (a) The lining and milk contact surfaces of a bulk tank shall
25 be constructed of stainless steel or other materials which are equally smooth, nontoxic, stable,

1 non-absorbent, corrosion resistant, and capable of withstanding cleaning and sanitizing
2 treatment. Milk contact surfaces shall be readily accessible for inspection.

3 (b) A bulk tank shall be self-draining. Openings shall be equipped with self-draining covers.
4 Openings and covers shall be constructed and installed to prevent drainage into milk, or onto
5 milk contact surfaces.

6 (c) A bulk tank shall be equipped with all of the following:

7 1. An indicating thermometer that has a range of at least 32° F to 80° F.

8 2. A temperature recording device approved by the division, if the bulk tank is manufactured
9 after January 1, 2000. The temperature recording device shall comply with sub. (3).

10 (d) A bulk tank with a capacity of less than 1,500 gallons shall be equipped with a
11 mechanical agitator which will ensure homogeneity of all milk contained in the bulk tank within
12 5 minutes after the agitator begins operating. A bulk tank with a capacity of 1,500 gallons or
13 more shall be equipped with an agitator which will ensure homogeneity of all milk contained in
14 the bulk tank within 10 minutes after the agitator begins operating.

15 (e) A C-I-P bulk tank shall be designed and constructed so that cleaning, rinsing and
16 sanitizing solutions cannot enter the bulk tank while it contains milk.

17 **Note:** Bulk tanks manufactured in compliance with the "3-A Sanitary Standards for Farm Milk Cooling and
18 Holding Tanks" meet the sanitary design and construction requirements of this subsection. The "3-A Standards" are
19 published by 3-A Sanitary Standards, Inc., 6888 Elm Street, Suite 2D, McLean, VA 22101-3850, telephone (703)
20 790-0295, website www.3-a.org. Copies of the "3-A Standards" as amended effective July 23, 2012, are on file with
21 the division and the legislative reference bureau. Copies may be obtained from "3-A Sanitary Standards, Inc., Online
22 Store," at <http://www.techstreet.com>.

23
24 **(3) BULK TANK TEMPERATURE RECORDING DEVICE.** All of the following requirements apply
25 to a temperature recording device under sub. (2) (c) 2.:

26 (a) The temperature recording device shall be capable of accurately recording temperatures
27 between 40°F (4°C) and 180°F (82°C).

1 (b) A temperature recording chart on which the temperature recording device records milk
2 temperatures shall have graduations of not more than 2° F. (1° C.) at temperatures below 100° F.
3 (38° C.) and shall have at least one time span division per hour. The circular chart shall make 1
4 revolution in not more than 7 days and shall be graduated for a maximum record of 7 days.

5 (c) The milk producer shall retain milk temperature records for at least 6 months after the
6 temperature recording device makes those records. Milk temperature records shall identify the
7 milk producer, the date or dates to which the records pertain, the bulk tank to which the records
8 pertain if there is more than one bulk tank on the dairy farm, the signature of the person who
9 removed the temperature records from the temperature recording device, and any unusual
10 occurrences related to milk temperature.

11 (d) The dairy plant operator who procures milk from the milk producer shall calibrate the
12 temperature recording device every 6 months and shall keep complete and accurate records of
13 the calibration. The dairy plant operator shall make the records required under this section
14 available to the division for inspection and copying upon request.

15 **(4) BULK TANK COOLING CAPACITY.** A bulk milk tank shall be capable of cooling all milk
16 placed in the tank to a temperature of 45° F. (7° C.) within one hour after the milk is placed in the
17 tank. If uncooled milk from subsequent milkings is added to cooled milk in the bulk tank, the
18 bulk tank shall be capable of maintaining the blend temperature at or below 50° F. (10° C.), and
19 reducing the blend temperature to 45° F. (7° C.) within one hour.

20 **(5) MILKING DIRECTLY TO BULK TRANSPORT CONTAINER.** A milk producer may milk directly
21 to a bulk milk tanker if all the following apply:

22 (a) The milk producer controls the operation and maintenance of the bulk milk tanker.

23 **Note:** A milk producer may not collect milk from another milk producer, or commingle that milk with the milk
24 producer's milk, unless the milk producer operates as a bulk milk weigher and sampler under ch. ATCP 82. A milk
25 producer operating as a bulk milk weigher and sampler must hold a bulk milk tanker license, a grade A bulk milk

1 tanker permit (if applicable), and a bulk milk weigher and sampler license. The producer must also collect and
2 sample milk according to ch. ATCP 82.

3
4 (b) The bulk milk tanker is constructed and maintained according to bulk milk tanker
5 standards under s. ATCP 82.06.

6 (c) The bulk milk tanker has an access port that can be sealed.

7 (d) The bulk milk tanker while parked at the dairy farm, is kept on a pad of concrete or
8 equally impervious material. The pad shall be sloped for proper drainage, and shall be kept in a
9 clean condition.

10 (e) All permanent pipelines connecting the bulk milk tanker to the milk handling system end
11 in the milkhouse.

12 (f) The bulk milk tanker is parked such that the distance between the back of the tanker and
13 the milkhouse is minimized and the tanker to pipeline connection is made inside the milkhouse.

14 (g) The milk producer cools all milk to a temperature of 45° F. (7° C.) or lower before the
15 milk enters the bulk milk tanker. The milk producer may use a plate cooler, tube cooler or bulk
16 tank to cool the milk. Coolant used in cooling devices shall be food grade coolant approved by
17 the United States food and drug administration. The dairy plant operator who procures milk
18 from the milk producer shall test the coolant semi-annually for levels of coliform bacteria.

19 (h) A temperature recording device that records milk temperatures downstream from the
20 cooling device under par. (g). The probe of the temperature recording device shall be mounted
21 in a well in the milk pipeline except that, if the producer cools the milk in a bulk tank, the probe
22 may be mounted in the bulk tank. The temperature recording device shall comply with all of the
23 requirements that apply to bulk tank temperature recording devices under sub. (3).

24 (i) An indicating thermometer is installed as close as possible to the temperature recording
25 device under par. (h) to verify recorded temperatures.

1 (j) The bulk milk tanker outlet valve is close-coupled and protected with an effective dust
2 cover.

3 (k) The milk producer keeps the bulk milk cooling device, transport hose and bulk milk
4 tanker outlet valve in clean and sanitary condition. The milk producer shall clean and sanitize
5 the outlet valve before attaching it to the transport hose. The milk producer shall clean and
6 sanitize the bulk milk cooling device and transport hose between milkings, or at least once every
7 24 hours if the producer milks continuously.

8 (L) The dairy plant operator who receives the bulk milk shipment does all of the following
9 before unloading any milk from the bulk milk tanker or commingling it with milk from another
10 producer:

11 1. Tests the bulk shipment for drug residues according to s. ATCP 65.72.

12 2. Ensures that a person licensed under s. 97.17 or 98.146, Stats., has collected a sample from
13 the bulk shipment according to s. ATCP 82.12.

14 (m) The dairy plant operator cleans and sanitizes the bulk milk tanker after each milk
15 shipment, just as the operator would clean and sanitize a bulk milk tanker under s. ATCP 82.08.
16 The dairy plant operator shall seal the access port after cleaning and sanitizing the bulk milk
17 tanker.

18 **ATCP 65.18 Milking procedure. (1) PREPARING MILKING ANIMALS FOR MILKING.** A milk
19 producer shall clip the flanks, udder, belly and tail of each milking animal as often as necessary
20 to facilitate cleaning. The tail, belly and flanks shall be reasonably free of visible dirt at the time
21 of milking. If flanks and udders are brushed, brushing shall be completed before milking begins.
22 Hair on udders shall be kept short enough so that it is not incorporated with the teat in the
23 milking machine inflation during milking. The udder of each milking animal shall be clean at

1 the time of milking. Teats shall be cleaned, sanitized and dried immediately before milking. Wet
2 hand milking is prohibited.

3 (2) TRANSFER AND PROTECTION OF MILK. Milk shall be protected from contamination at all
4 times. Upon being drawn from milking animals, milk shall immediately be transferred from the
5 milking barn or parlor to the milkhouse. Containers of milk may not be stored in the milking
6 barn or parlor. If milk is transferred to the milkhouse in containers, rather than through a
7 pipeline or other vacuum transfer system, the milk producer shall transfer each container of milk
8 to the milkhouse immediately after it is filled. Milk contact surfaces of equipment and utensils
9 used to collect or transfer milk shall be protected from contamination before and during use.
10 Milk containers shall be covered to protect milk and milk contact surfaces from contamination,
11 except when milk is being poured into or out of the container. Milk that overflows, leaks or
12 spills from its proper container or transfer vessel shall be discarded.

13 (3) PERSONNEL; CLEANLINESS. Milkers and milk handlers shall wash and dry their hands
14 before engaging in milking or milk handling operations, and before resuming such operations
15 after engaging in other activities. Outer garments worn by milkers and milk handlers shall not be
16 soiled to the extent that they might contaminate milk, milk contact surfaces, or the hands of a
17 milker or milk handler. No person may engage in milking or milk handling operations if that
18 person is infected with a communicable disease which is transmissible to others as a result of the
19 milking or milking handling operations.

20 (4) COOLING MILK. (a) Except as provided under par. (b), milk shall be cooled to 45° F. (7°
21 C.) or less within 1 hour after milking. If uncooled milk from subsequent milkings is added to
22 cooled milk, the blend temperature shall not exceed 50° F. (10° C.) at any time, and the blend

1 temperature shall be reduced to not more than 45° F. (7° C.) within 1 hour after the uncooled
2 milk is added.

3 (b) Grade B milk in cans shall be cooled to 50° F. (10° C.) or less within 2 hours after
4 milking, and shall be kept at or below 50° F. (10° C.) until it is delivered to the dairy plant. If
5 milk is stored or cooled in cans, milk from a morning milking shall not be commingled with milk
6 from an evening milking.

7 (5) STRAINING MILK. Milk shall be strained before it is deposited in a bulk tank or shipping
8 container. Only clean single-service filters may be used to strain milk. Filters shall not be
9 reused.

10 (6) COMMINGLING OF MILK FROM DIFFERENT MILKING SPECIES PROHIBITED. A milk producer
11 may not commingle milk from one species of milking animal with the milk of another species of
12 milking animal.

13 **Note:** Cows are the same species, even if they are of different breeds, so their milk may be commingled.
14 However, cows and goats are different species and their milk may not be commingled.

15
16 (7) MILK COOLING AND STORAGE. Milk cooled and stored on a dairy farm shall be cooled
17 and stored in facilities that comply with this chapter.

18 **ATCP 65.20 Abnormal milk; milking diseased animals.** (1) Milking animals which
19 appear to be secreting abnormal milk from one or more quarters shall be milked last or with
20 separate equipment, and their milk shall be discarded.

21 (2) If milking animals consume or are treated with chemical, medicinal or radioactive agents
22 which may be secreted in milk, and which may be deleterious to human health, the milking
23 animals shall be milked last or with separate equipment, and their milk shall be discarded.

24 (3) Milk that is bloody, stringy, off-colored, abnormal to sight or odor, or abnormal in any
25 other respect shall be discarded.

1 (4) Equipment and utensils used to handle abnormal milk shall not be used to handle milk
2 produced for human consumption unless the equipment and utensils are first thoroughly cleaned
3 and sanitized.

4 (5) Drugs prescribed by a veterinarian for use on milking animals shall be clearly labeled
5 with the name of the drug, each active ingredient, directions for use, the length of time for which
6 milk must be withheld following the cessation of drug therapy, any applicable warnings or
7 precautions to be observed by the milk producer, and the name and address of the prescribing
8 veterinarian. No drug or medicinal item may be used in a manner inconsistent with label
9 directions or the veterinarian's prescription, or in a negligent manner.

10 (6) Abnormal milk or milk from diseased animals shall not be stored or held in the
11 milkhouse or milking parlor after being collected. The milk shall be immediately removed and
12 discarded.

13 **ATCP 65.22 Farm premises. (1) GENERAL.** Farm premises adjacent to a milking barn,
14 milking parlor, or milkhouse shall be kept free of conditions which may result in the
15 contamination of milk.

16 (2) **MANURE STORAGE AND DISPOSAL.** Manure shall be removed and stored in a manner
17 which inhibits the breeding of flies. No milking animals may have access to a manure storage
18 area. This does not prohibit a cold weather manure pack in a cowyard if the manure pack is
19 properly maintained to prevent excessive accumulations of manure on the udders and flanks of
20 milking animals.

21 (3) **COWYARD.** A cowyard shall be graded for proper drainage, and shall be kept free of
22 standing pools of water and accumulations of manure or feed waste. In loafing pens, manure
23 shall be removed or clean bedding added with sufficient frequency to prevent excessive

1 accumulation of manure on the udders and flanks of milking animals. Accumulations of waste
2 feed shall be promptly removed. Manure packs shall be properly drained and shall provide a
3 reasonably firm footing. Swine and other non-milking animals shall be kept out of the cowyard.

4 (4) STATIONARY FEEDERS IN COWYARD. Stationary feeders in a cowyard shall be fully
5 surrounded by a paved surface on which milking animals stand while feeding. The paved
6 surface shall extend at least 12 feet in all directions from the feeder, except that a paved surface
7 installed before January 1, 1979, shall extend at least 8 feet in all directions from the feeder. If
8 the distance between a feeder and another building or permanent structure is less than the paved
9 surface width prescribed under this subsection, the paved surface shall extend to the building or
10 other permanent structure.

11 (5) STOCK WATERING DEVICES AND PORTABLE FEEDERS IN COWYARD. Stock watering devices
12 and portable feeders shall be located in an area which is well drained and provides reasonably
13 firm footing for animals using the facilities.

14 (6) TOILETS. (a) Every dairy farm shall have one or more sanitary toilets, conveniently
15 accessible by persons engaged in milking operations. A conveniently accessible toilet may
16 include a toilet in a farm residence or other farm building.

17 (b) Toilets under par. (a) shall comply with chs. SPS 362 and NR 812. Toilets shall be kept in
18 clean and sanitary condition.

19 (c) There shall be no mixing or storage of human waste or septage with animal manure on a
20 dairy farm.

21 (7) PEST CONTROL. Insects, rodents and other pests shall be controlled, as necessary, to
22 prevent the contamination of milk and milk contact surfaces of equipment and utensils.

1 Pesticides shall not be stored, handled or used in a manner which might contaminate milk, milk
2 contact surfaces, feed or water.

3 **Note:** Pesticide storage and use must comply with ss. 94.67 to 94.71, Stats., and ch. ATCP 29. Pesticides must
4 be registered for use by the U.S. environmental protection agency or by the department. Pesticides shall not be
5 stored, handled or used in a manner inconsistent with label directions, or in a negligent manner.

6
7 **(8) ANIMAL DRUG STORAGE.** No animal drug or medicinal item may be kept in or
8 immediately adjacent to dairy farm facilities used for dairying operations unless the animal drug
9 or medicinal item is designed or prescribed for use on dairy animals. Animal drugs and
10 medicinal items stored immediately adjacent to the milking barn, milking parlor or milkhouse
11 shall be protected from outdoor conditions, and shall be stored above the floor, on racks or in a
12 cabinet. Animal drugs and medicinal items shall be stored in a manner which prevents
13 contamination of milk, and equipment and utensils coming in contact with milk. Animal drugs
14 and medicinal items shall be clearly labeled to indicate their identity and intended use, and
15 prescription drugs shall be labeled as provided under s. ATCP 65.20 (5). Animal drugs and
16 medicinal items intended solely for non-lactating animals shall be stored separately from those
17 used on lactating animals.

18 **Subchapter III – Dairy Plants**

19 **ATCP 65.24 Construction and maintenance.** (1) **GENERAL.** (a) Buildings, facilities, and
20 equipment used in the operation of a dairy plant shall be soundly constructed, and shall be
21 capable of being maintained in a clean and sanitary condition. The interior and exterior portions
22 of a dairy plant, and the premises on which a dairy plant is located, shall be kept free of
23 unhealthful and unsanitary conditions, and shall be maintained in compliance with this chapter.

24 (b) The division may issue a written waiver granting a variance from a construction standard
25 under this subchapter if the division finds that the variance is reasonable and necessary under the
26 circumstances, and will not compromise the purpose served by the construction standard and the

1 facility does not hold a grade A permit. A waiver under this paragraph may be issued by the
2 administrator of the division, or the administrator's designee.

3 (c) A dairy plant may not be directly connected to a milking barn, milking parlor or animal
4 housing area.

5 (2) FLOORS. The floors of all rooms in which dairy products are processed, handled, or
6 stored, or in which dairy product containers, equipment, or utensils are cleaned and sanitized,
7 shall be all of the following:

8 (a) Kept clean and in good repair.

9 (b) Smooth enough to be easily cleanable.

10 (c) Constructed of concrete or equally impervious and easily cleanable materials. This
11 paragraph does not prohibit tightly joined wooden floors in storage rooms used solely for the
12 storage of dry ingredients or packaging materials, or both.

13 (d) Sloped to provide adequate drainage. This paragraph does not apply to floors in storage
14 rooms used solely for the storage of dry ingredients or packaging materials, or both. (e)
15 Equipped with an adequate number of trapped floor drains, so that any liquids draining onto the
16 floors are promptly removed. Floors in refrigerated storage rooms need not have floor drains if
17 the floors are sloped to drain to one or more exits to prevent pooling of liquids. This paragraph
18 does not apply to floors in storage rooms used solely for the storage of dry ingredients or
19 packaging materials, or both.

20 (3) WALLS AND CEILINGS. (a) Walls and ceilings of rooms in which dairy products are
21 handled, processed, or stored, or in which dairy product containers, equipment, or utensils are
22 cleaned and sanitized, shall have a smooth, washable, and light-colored surface, and shall be kept
23 clean and in good repair. Suspended ceiling panels are prohibited in any room where powdered

1 dairy products are packaged or processed if that room is constructed or substantially altered after
2 December 1, 1994.

3 **Note:** Walls and ceilings may consist, for example of smooth finished concrete construction panels or cement
4 plaster.

5
6 (b) If condensation may accumulate on overhead pipes, ducts, or other fixtures, those fixtures
7 shall be arranged or shielded so that condensation does not drop into dairy products or onto
8 product contact surfaces.

9 (c) In rooms constructed or substantially altered after the effective date of this chapter, the
10 junctions of walls and floors in processing areas shall be coved to facilitate cleaning.

11 **(4) DOORS, WINDOWS, AND OTHER OPENINGS.** (a) Doors, conveyor openings, and other
12 openings to the outside environment shall be kept closed when not in use, and shall at all times
13 be protected against the entry of insects, rodents, and excessive dust. Doors to the outside, other
14 than overhead doors and electronic sliding doors in delivery areas of milk receiving stations and
15 grade B dairy plants, shall be self-closing. External screen doors, if any, shall open outward.

16 **Note:** Air curtains, strip curtains, and similar devices may be used to prevent insects and excessive dust from
17 entering through doors and other openings while those openings are in use. Emergency exit doors need not be self-
18 closing unless they are routinely used by dairy plant personnel.

19
20 (b) Windows, if not permanently closed, shall be screened against flying insects, rodents, and
21 birds. In dairy plants constructed or substantially altered after the effective date of this chapter,
22 window ledges shall be sloped to an angle of at least 45° to facilitate cleaning.

23 (c) Outside openings of dairy product pipelines shall be tightly capped when not in use.
24 When a pipeline is in use, the pipeline cap shall be tethered or placed on a sanitary hanger or
25 rack to protect it from contamination. Pipeline openings through walls shall be completely
26 cemented or fitted with tight metal collars.

1 (d) At each doorway leading from a nonprocessing area to a processing area in which
2 exposed dairy products are processed, a dairy plant operator shall provide a sanitizing footbath,
3 disposable footwear, dedicated footwear, or other facilities to ensure that footwear worn in the
4 processing area is clean and sanitary.

5 (5) LIGHTING. (a) Lighting in every area of a dairy plant shall be fully adequate for the
6 purpose for which the area is used. Except as provided under par. (b) or (c), there shall be at
7 least 5 foot candles (54 lux) of illumination, measured at 30 inches above the floor, in every part
8 of a dairy plant.

9 (b) Except as provided under par. (c), there shall be at least 30 foot candles (323 lux) of
10 illumination at every place where dairy products are processed, and at every place where
11 equipment or utensils are cleaned and sanitized.

12 (c) There shall be at least 50 foot-candles (538 lux) of illumination on every surface where
13 dairy products are graded or examined for condition and quality, and on every surface where
14 multi-use packages are inspected before being reused.

15 (d) Light bulbs, fluorescent tubes, skylights, and other overhead glass fixtures shall be
16 shielded to prevent broken glass from falling into dairy products or onto dairy product contact
17 surfaces.

18 (6) VENTILATION. (a) Every room in a dairy plant shall be adequately ventilated, and
19 adequately controlled for temperature and humidity, to keep the room reasonably free of fumes,
20 odors, mildew, and excessive condensation.

21 (b) Ventilation systems, including exhaust fans, intake fans, and ventilation ducts shall be
22 kept clean and in good repair, and shall be screened or louvered to prevent contamination of
23 dairy products by dust, insects, or other contaminants. Intake fans shall be equipped with filters

1 that are readily removable for cleaning and replacement. Air intake filters shall be capable of
2 removing at least 85% of particulate matter which is 5 microns or larger in size.

3 (c) Ventilation systems in a dairy plant shall be positioned so that exhaust air does not
4 contaminate exposed dairy products, clean dairy product packages, or clean equipment or
5 utensils.

6 (7) ROOMS. (a) Dairy plant rooms shall be large enough so that activities conducted in those
7 rooms can be conducted in a safe and sanitary manner.

8 (b) Within a dairy plant, the following areas shall be located in separate rooms:

9 1. Raw milk unloading areas.

10 2. Areas used to clean and sanitize bulk milk tankers or bulk transport containers. Bulk milk
11 tankers and bulk transport containers may be cleaned and sanitized in the same room where they
12 are unloaded.

13 3. Processing areas.

14 4. Areas used to clean or sanitize dairy product packages or containers.

15 5. Areas used to store or fabricate dairy product packages. Packaging materials required for
16 each day's processing operations may be kept in a processing area on that day.

17 6. Areas used to store dairy product ingredients, other than raw milk. Ingredients required
18 for each day's processing operations may be kept in the processing area on that day.

19 7. Areas used to receive, handle, or store returned packaged dairy products.

20 8. Areas used for boiler, heating plant, utility, or maintenance equipment.

21 9. Employee toilet areas.

22 10. Employee locker areas, dressing areas, break areas, and lunch areas.

1 11. Areas, if any, used as living quarters. Processing or storage rooms that are constructed
2 after the effective date of this chapter and share one or more walls with adjacent living or
3 sleeping quarters shall have a separate entrance and shall not provide direct access to the living
4 or sleeping quarters.

5 (c) In dairy plants constructed or licensed after December 1, 1994, raw milk shall be
6 unloaded in a fully enclosed intake room.

7 (d) Notwithstanding par. (b), a dairy plant operator may store, cool, separate, and clarify raw
8 milk in an area that the operator uses to unload bulk milk shipments if all the following apply:

9 1. The area is within a fully enclosed room.

10 2. Containers used to store, cool, separate, and clarify the raw milk are filtered or vented to a
11 separate room to protect the milk from airborne contamination in the unloading area. If
12 containers are vented to a separate room, that room shall comply with processing area sanitation
13 standards under this chapter.

14 (e) Notwithstanding par. (d), a dairy plant operator may not store, cool, separate, or clarify
15 raw milk in a room used to unload bulk milk shipments if any of the following apply:

16 1. The dairy plant was constructed or licensed after December 1, 1994.

17 2. The dairy plant is a grade A dairy plant constructed or licensed after July 1, 1980.

18 3. The storage, cooling, separating, or clarifying operations were initiated after December 1,
19 1994.

20 (f) Rooms are considered separate, for purposes of this subsection, if they are fully separated
21 by permanent floor-to-ceiling partitions and if doorways between the rooms are equipped with
22 solid, tight-fitting, self-closing doors.

1 (8) DAIRY PLANT WATER SUPPLY. (a) Water used in dairy plant operations, or as an
2 ingredient in dairy products, shall be obtained from a source that complies with ch. NR 811 or
3 812, administered by the Wisconsin department of natural resources. All water obtained for use
4 in a dairy plant shall comply with the bacteriological standards in ch. NR 809. Water shall be
5 available in consistently adequate quantity for all dairy plant operations, including processing,
6 cleaning, handwashing, and drinking. The division may grant a conditional waiver for elevated
7 levels of non-microbial contaminants as defined in NR 809 in processing water or ingredient
8 water.

9 (b) If a dairy plant uses water from a privately owned water system, the dairy plant operator
10 or, in the case of a grade A dairy plant, the division shall, at least once every 6 months, and after
11 a repair or alteration to the water system, collect and analyze a sample of the water for
12 compliance with the microbiological standards under s. NR 809.30. If the water supply is from
13 more than one well, each well shall be sampled and tested. Each sample shall be taken upstream
14 from any pressure tank or other water treatment equipment. Microbiological analyses shall be
15 conducted in a laboratory certified under ch. ATCP 77.

16 (c) At the division's request, a dairy plant operator who receives water from a municipal
17 source shall provide the division with documentation showing that the water complies with the
18 bacteriological standards under s. NR 809.30.

19 (d) The following requirements apply to recirculated water used in a cooler or heat exchanger
20 that may come in contact with any dairy product:

- 21 1. Obtained from a safe source that complies with par. (a).
- 22 2. Bacteriologically safe.
- 23 3. Protected from contamination.

1 4. Tested by the dairy plant operator at least semiannually or, in the case of a grade A dairy
2 plant, by the department at least semiannually.

3 (e) If a recirculating water system under par. (d) becomes contaminated, that system may not
4 be used until it is properly treated and retested to ensure that the contamination has been
5 eliminated. Freezing point depressants used in recirculating water systems under par. (d) shall be
6 food or pharmaceutical grade, non-toxic, meet the specifications for propylene glycol in 21 CFR
7 184.1666, and shall not contain coliform bacteria as determined by sampling and analysis which
8 the dairy plant operator has done at least semi-annually.

9 (f) A dairy plant operator may use only potable water, or reclaimed water in compliance with
10 sub. (9) (c), to produce culinary steam. In boilers used to produce culinary steam, boiler water
11 additives shall comply with 21 C.F.R. 173.310.

12 (g) The following requirements apply to water that is transported to a dairy plant in a
13 container or tank, for use in dairy plant operations:

14 1. The water shall be potable.

15 2. The container or tank shall be thoroughly cleaned and sanitized before being filled.

16 3. The container or tank shall be sealed, and the water shall be protected from contamination
17 during transit.

18 4. A suitable cleaned and sanitized pump, hose, and fittings shall be used to transfer water
19 from the container or tank to a storage tank at the dairy plant, so that the water is not
20 contaminated during transfer.

21 (h) If a grade A dairy plant uses water to flush pasteurized milk or milk products from milk
22 processing systems, that water shall be of a microbiological quality equivalent to that of
23 pasteurized milk.

1 (9) RECLAIMED WATER. (a) A dairy plant operator may use water reclaimed from heat
2 exchanger processes or from the condensation of milk or dairy products if all the following
3 apply:

4 1. The water is reclaimed from a heat exchanger process or by means of evaporation, reverse
5 osmosis, or ultrafiltration.

6 2. The water meets applicable use conditions under this section.

7 (b) Reclaimed water may not be used for any purpose requiring potable water unless all the
8 following apply:

9 1. The department pre-inspects and pre-approves the reclamation system.

10 2. The reclaimed water contains less than 1 coliform bacterium per 100 ml. of water.

11 3. The reclaimed water otherwise meets the microbiological standards under s. NR 809.30.

12 4. The organic content of the water is less than 12 mg. per liter as measured by the chemical
13 oxygen demand or permanganate-consumed test, or the water has a standard turbidity of less
14 than 5 units. The dairy plant operator shall use an automatic fail-safe monitoring device to
15 identify, and automatically divert to a waste water system, any water reclaimed from the
16 condensation of dairy products if that water fails to meet this standard.

17 5. The reclaimed water is of satisfactory organoleptic quality and has no off-odors, off-
18 flavors, or slime. The dairy plant operator shall sample and organoleptically test reclaimed water
19 at weekly intervals.

20 6. The department pre-approves any chemicals used to suppress bacterial growth, tastes, or
21 odors in the reclaimed water. An automatic proportioning device shall add the chemicals to the
22 water before the water enters the storage tank. The dairy plant operator shall test reclaimed

1 water at least daily for each added chemical. An added chemical may not contain any substance
2 that may contaminate dairy products or limit the use of reclaimed water.

3 7. The reclaimed water is stored in a properly constructed tank. The tank shall be constructed
4 of a material that will not contaminate the water and can be easily cleaned and sanitized.

5 8. The dairy plant operator or, in the case of a grade A dairy plant, the department tests the
6 reclaimed water for compliance with microbiological and organic content standards at least semi-
7 annually. The operator shall test the reclaimed water for 14 working days after the department
8 approves the reclamation system under subd. 1., and for at least 7 working days after any repairs
9 or alterations to the system.

10 9. There are no cross-connections between reclaimed water lines and any public or private
11 water system.

12 (c) Reclaimed water may be used for the limited purposes of producing culinary steam, pre-
13 rinsing food contact surfaces of equipment or utensils, or preparing cleaning solutions if all the
14 following apply:

15 1. The reclaimed water meets all conditions under par. (b) 1., 2., 4. to 7. and 9.

16 2. The reclaimed water is used only on the day that it is reclaimed, except that reclaimed
17 water may be stored for later use if it is automatically maintained at a temperature of not less
18 than 145° F. (63° C.), or is chemically treated to suppress bacterial propagation. Chemical
19 treatments shall comply with par. (b) 6.

20 3. Distribution lines and hose stations used to distribute the reclaimed water are clearly
21 identified as "limited-use reclaimed water."

22 4. The dairy plant operator posts clear instructions for the use of the reclaimed water. The
23 operator shall post the instructions so that they will be seen and understood by persons using the

1 reclaimed water. The instructions shall disclose the limited purposes for which the reclaimed
2 water may be used.

3 5. Water lines distributing the reclaimed water are not permanently connected to dairy
4 product vessels. If a water line is temporarily connected to a dairy product vessel, there shall be
5 an atmospheric break and automatic controls to prevent the reclaimed water from contacting
6 dairy products.

7 (d) Reclaimed water that does not qualify for use under par. (b) or (c) may only be used as
8 boiler feedwater.

9 **(10) PLUMBING SYSTEM; DISPOSAL OF SEWAGE AND LIQUID WASTE.** (a) All dairy plant
10 plumbing, plumbing fixtures, and equipment shall comply with state and local plumbing codes,
11 and shall be designed, installed, and maintained to prevent backflow, backsiphonage, and cross-
12 connections.

13 (b) Sewage and liquid waste from a dairy plant shall be removed in a sanitary manner, in
14 compliance with applicable state and local regulations.

15 **Note:** Plumbing and plumbing fixtures must comply with applicable rules of the Wisconsin department of
16 safety and professional services under chs. SPS 382 to 386.

17
18 **(11) CLEANING FACILITIES.** (a) If equipment or utensils in a dairy plant are cleaned or
19 sanitized manually, the dairy plant shall be equipped with wash and rinse sinks that are suitable
20 for all manual cleaning and sanitizing operations. Sinks shall be conveniently located and
21 adequate in number, and shall comply with all of the following requirements:

22 1. Every sink shall be constructed of stainless steel or other materials approved by the
23 department.

24 2. Every sink shall have at least 2 compartments. If a dairy plant is also engaged in food
25 processing as defined under s. 97.29 (2) (b), Stats., every sink installed in a food processing area

1 after December 1, 1994 shall have at least 3 compartments for washing, rinsing, and sanitizing
2 equipment and utensils unless the dairy plant operator uses an alternative method for sanitizing
3 equipment and utensils which is approved by the division in writing.

4 3. Every sink compartment shall be large enough so that the largest item cleaned or sanitized
5 in the sink can be halfway immersed in the sink. Every sink compartment shall be served by hot
6 and cold running water, and shall be cleaned prior to each use.

7 (b) Sinks used to clean and sanitize equipment and utensils may not be used as handwashing
8 sinks.

9 (c) Brushes and other cleaning tools used to clean equipment and utensils shall be cleaned
10 after each use and sanitized prior to their next use. Single-service disposable towels, if used to
11 clean equipment or utensils, shall be discarded after a single use.

12 (d) If a mechanical system is used to clean or sanitize equipment or utensils, the mechanical
13 system shall be designed, installed, and maintained so that it is fully effective for the purpose
14 used.

15 (e) A dairy plant shall be equipped with conveniently located hose connections to facilitate
16 cleaning operations in the dairy plant. When hoses are not in use, they shall be neatly stored off
17 the floor on racks or reels.

18 **(12) TOILET FACILITIES.** (a) Every dairy plant shall have toilet facilities that comply with
19 chs. SPS 361 to 365, administered by the Wisconsin department of safety and professional
20 services.

21 (b) Toilet rooms shall be conveniently located, but shall not open directly into any room
22 where milk or dairy products are processed. Every toilet room shall be completely enclosed and

1 shall have a tight-fitting, solid, self-closing door. The door shall be kept closed except when the
2 toilet room is being cleaned or repaired.

3 (c) Toilet rooms and fixtures shall be kept clean, sanitary, and in good repair. A supply of
4 toilet tissue shall be provided at each toilet at all times.

5 (d) Every toilet room shall be equipped with hand-washing facilities with hot and cold
6 running water, soap, and single service towels or air drying equipment. Common towels are
7 prohibited. Easily cleanable, covered receptacles shall be provided for waste materials.

8 (e) One or more conspicuous signs, directing personnel to wash their hands before returning
9 to work, shall be prominently posted in every toilet and dressing room. Signs shall be clearly
10 printed in a language or languages that can be understood by all dairy plant personnel.

11 **(13) LOCKER AND LINEN FACILITIES.** (a) Clothing and personal items of dairy plant
12 personnel, when not being worn or carried, shall be neatly stored in lockers or comparable
13 facilities provided for that purpose. Clothing and personal items may not be stored in areas
14 where milk, dairy products, or ingredients are received, processed, handled, or stored, or in areas
15 where dairy product containers, equipment, or utensils are cleaned or stored.

16 (b) Work clothing, when not being worn by dairy plant personnel, shall be stored in an
17 orderly and sanitary manner. Soiled linen and clothing shall be kept in nonabsorbent containers
18 or laundry bags until removed for laundering or disposal. Soiled linen and clothing shall be
19 removed as often as necessary to prevent unsanitary conditions.

20 **(14) HANDWASHING SINKS IN PROCESSING AREAS.** (a) Handwashing sinks with available hot
21 and cold running water shall be provided for use by all dairy plant personnel working in
22 processing areas. The sinks shall be conveniently accessible, and shall be kept in a clean and
23 sanitary condition.

1 (b) A supply of soap or detergent, and a sanitary single- service means for drying hands, shall
2 be provided at each handwashing sink at all times. Common towels are prohibited. If disposable
3 towels are used, a clean covered waste receptacle shall be provided for their disposal.

4 (c) A handwashing sink may not be used to clean or sanitize equipment or utensils.

5 (d) A handwashing sink installed to serve a processing area shall be located in that
6 processing area. The sink shall be served by potable tempered water, or by potable hot and cold
7 water delivered through a mixing valve or combination faucet. The sink shall not be hand
8 operated. If a self-closing, slow-closing, or metered faucet is used, the faucet shall provide an
9 uninterrupted flow of water for at least 15 seconds before it becomes necessary to reactivate the
10 faucet.

11 (e) An automatic handwashing device may be substituted for a handwashing sink under this
12 subsection if the automatic handwashing device provides a safe and effective means for washing
13 hands.

14 **(15) INTERIOR PREMISES; CLEANLINESS.** Every room of a dairy plant shall be kept in a clean
15 and orderly condition.

16 **(16) EXTERIOR PREMISES; CLEANLINESS.** (a) The premises surrounding a dairy plant shall be
17 well drained and shall be kept in an orderly condition. The premises shall be kept free of
18 accumulated trash, garbage, and other sanitation hazards. Driveways and parking lots shall be
19 surfaced or maintained to minimize airborne dust and dirt.

20 (b) Every outdoor storage tank used for liquid food ingredients shall be located on a drained
21 impermeable surface. All loading and unloading of liquid food ingredients from that storage
22 tank shall be conducted over a drained impermeable surface.

1 (17) GARBAGE AND SOLID WASTE DISPOSAL. (a) Garbage and solid waste shall be removed
2 from the dairy plant premises as often as necessary to keep the premises in a clean and sanitary
3 condition.

4 (b) Garbage and solid waste storage areas shall be constructed and maintained so that they do
5 not attract or harbor insects, rodents, or other animals.

6 (c) Garbage and solid waste shall be held in durable, leakproof, easily cleanable, and pest-
7 resistant containers. Containers shall be covered with tight-fitting lids, and shall be cleaned
8 when necessary to prevent unsanitary conditions. Waste containers receiving solid waste from
9 packaging and bottle washing operations may be uncovered, if necessary, when those operations
10 are in progress.

11 (d) No garbage or solid waste may be burned on the dairy plant premises, except in
12 compliance with state and local regulations. No garbage or solid waste may be burned on the
13 premises if the burning may contaminate dairy products.

14 (18) PEST CONTROL. A dairy plant shall be free of any evidence of insect, rodent, or other
15 pest infestation. A dairy plant operator shall take effective measures to prevent and, if necessary,
16 eradicate pest infestations. No pesticide may be stored, handled, or used in a manner
17 inconsistent with label directions, in a negligent manner, or in a manner that may contaminate
18 dairy products.

19 Note: Pesticides must be handled, stored, and used in compliance with ss. 94.67 to 94.71, Stats., and ch. ATCP
20 29.

21
22 (19) CONSTRUCTION PLANS; NOTIFICATION; REVIEW. Before constructing, substantially
23 reconstructing, or extensively altering a dairy plant, a dairy plant operator shall provide the
24 division with complete plans and specifications for the construction, reconstruction, or alteration.

1 Within 30 days after a dairy plant operator files plans with the division under this subsection, the
2 division shall return its comments or objections, if any, in writing.

3 **ATCP 65.26 Personnel; sanitation standards. (1) CLEANLINESS AND SANITATION;**

4 GENERAL. (a) Within a dairy plant, access to processing areas shall be restricted to dairy plant
5 employees and other authorized personnel.

6 (b) Persons who handle or process dairy products shall maintain a high degree of personal
7 cleanliness, and shall observe good hygienic practices during all working periods.

8 (c) Persons who handle or process dairy products shall thoroughly wash their hands before
9 beginning work and before returning to work after using toilet facilities, eating, smoking, or
10 engaging in other activities that may contaminate their hands.

11 (d) A person with a discharging or infected lesion on a hand or arm may not handle or
12 process unpackaged dairy products without appropriate sanitary protection. Appropriate sanitary
13 protection shall include all the following:

14 1. An impermeable bandage on the lesion.

15 2. Single-use sanitary gloves or, if the lesion is on the arm, a full sleeved garment with tight
16 fitting cuffs.

17 (e) Persons who handle or process dairy products shall keep their fingernails clean and neatly
18 trimmed. They shall not wear fingernail polish unless they wear sanitary gloves at all times
19 when working.

20 (f) No person infected with a disease communicable by food handling may work in a dairy
21 plant in any capacity that may contaminate dairy products.

22 **(2) CLOTHING AND JEWELRY.** (a) Whenever any person is in a processing area, or is engaged
23 in handling unpackaged milk or dairy products, that person shall wear clean, washable outer