

8. NURSING FACILITIES

In this edition appendix material appears in the main body of the document; however, it remains advisory only.

8.1 General Conditions

*8.1.A. Applicability

This section covers the continuum of nursing services listed below, which may be provided within freestanding facilities or as distinct parts of a general hospital or other health care facility. ~~It, and~~ represents minimum requirements for new construction and shall not be applied to existing facilities unless major construction renovations (see Section 1.3.A) are undertaken.

The continuum of nursing services and facilities may be distinguished by the levels of care, staffing support areas and service areas provided and classified as:

Nursing and skilled nursing facilities.

Special care facilities, including:

Subacute care facilities ([Section 8.7](#)).

Alzheimer's and other dementia units ([Section 8.8](#)).

8.1.B. Ancillary Services

When the nursing facility is part of, or contractually linked with, another facility, services such as dietary, storage, pharmacy, linen ~~services~~, and laundry may be shared insofar as practical. In some cases, all ancillary service requirements will be met by the principal facility and the only modifications necessary will be within the nursing facility. In other cases, programmatic concerns and requirements may dictate separate services.

8.1.C. Environment of Care

Nursing facilities shall be designed to provide flexibility in order to meet the changing physical, medical, and psychological needs of the residents. The facility design shall produce a supportive environment to enhance and extend quality of life for residents and facilitate wayfinding while promoting privacy, dignity, and self-determination. The architectural design—through the organization of functional space, the specification of ergonomically appropriate and arranged furniture and equipment, and the selection of details and finishes—shall eliminate as many barriers as possible to effective access and use by residents of all space, services, equipment, and utilities appropriate for daily living.

While there are similarities in the spatial arrangement of hospitals and nursing facilities, the service requirements of long-term care residents will require additional special design considerations. When a section of an acute-care facility is converted, it may be necessary to reduce the number of beds to provide space for long-term care services. Design shall maximize opportunities for ambulation and self-care, socialization, and independence and minimize the negative aspects of an institutional environment.

8.1.D. Site

See Sections 3.1 and 3.3 for requirements regarding location and environmental pollution control.

8.1.E. Roads

Roads shall be provided within the property for access to the main entrance and service areas. Fire department access shall be provided in accordance with local requirements. The property or campus shall be marked to identify emergency services or departments.

8.1.F. Parking

In the absence of local requirements, each nursing facility shall have parking space to satisfy the needs of residents, employees, staff, and visitors. The facility shall provide a minimum of one space for every four beds.

8.1.G. Program of Functions

The sponsor for each project shall provide a functional program for the facility (see Section 1.1.F ~~of this document~~).

8.1.H. Services

Each nursing facility shall, as a minimum, contain the elements described within the applicable paragraphs of this section. However, when a project calls for the sharing or purchase of services, appropriate modifications or deletions in space and parking requirements may be made.

8.1.I. Renovation

See Section 1.3.

8.1.J. Provisions for Disasters

See Section 1.5.

8.1.K. Codes and Standards

See Section 1.6.

8.1.L. Equipment

See Chapter 4.

8.1.M. Phasing, Design, and Construction

See Chapter 5.

8.1.N. Record Drawings and Manuals

See Chapter 6.

8.2 Resident Unit

Each resident unit shall comply with the following:

***8.2.A. Size and Configuration**

Resident units are groups of resident rooms, staff work areas, service areas, and resident support areas, whose size and configuration are based upon organizational patterns of staffing, functional operations, and communications, as provided in the functional program for the facility. In the absence of local requirements, consideration shall be given to restricting the size of the resident unit to 60 beds or a

maximum travel distance from the staff station to a resident room door of 150 feet (45.72 meters). Arranging groups of resident rooms adjacent to decentralized service areas, optional satellite staff work areas, and optional decentralized resident support areas is acceptable. In new construction, resident units shall be arranged to avoid unrelated travel through resident units.

8.2.B. Resident Rooms

Each resident room shall meet the following requirements:

~~*8.2.B1. Maximum room occupancy in renovations (less than 50 percent change) shall be four residents; two residents in new construction. Based upon the functional program, provisions shall be made for individual occupancy when medically or behaviorally indicated. Maximum room occupancy in new construction and renovations (more than 50 percent of current facility replacement cost) shall be two residents.~~

~~*8.2.B2. Room size (area and dimensions) shall be determined by analyzing the needs of the resident(s) to move about the room in a wheelchair, gain access to at least one side of ~~his or her~~the bed, turn and wheel around the bed, ~~to~~gain access to a window and to the resident's toilet room, wardrobe locker, or closet; and to the resident's possessions or equipment, including chair, dresser, and night-stand. Room size and configuration shall permit resident(s) options for bed location(s); and make provision for visual privacy. In multiple-bed rooms, clearance shall allow for the movement of beds and equipment without disturbing residents. Clear access to one side of the bed shall be provided along 75 percent of its length. In multiple-bed rooms, clearance shall allow for the movement of beds and equipment without disturbing other residents. Mechanical and fixed equipment shall not obstruct access to any required element. These guidelines shall allow arrangement of furniture that may reduce these access provisions, without impairing access provisions for other occupants.~~

8.2.B3. Each room shall have a window that meets the requirements of Section 8.14.A4.

~~8.2.B4. A ~~H~~handwashing stations shall be provided in each resident room. ~~They~~It may be omitted from a single ~~--~~bed or two ~~--~~bed room when such a handwashing station is located in an adjoining toilet room serving that room only.~~

~~*8.2.B5. Each resident shall have access to a toilet room without having to enter the corridor area. One toilet room shall serve no more than two residents in new construction and no more than four beds or two resident rooms in renovation projects. The toilet room shall contain a water closet and handwashing station and (where permitted) a horizontal surface for the personal effects of each resident. Doors to toilet rooms may be hinged, or where local requirements permit, sliding or folding doors may be used, provided adequate provisions are made for acoustic privacy and resident safety. Toilets ~~utilized~~used by residents shall be provided sufficient clearance on both sides of the water closet to enable physical access and maneuvering by staff, who may have to assist the resident in wheelchair-to-water ~~--~~closet transfers and returns. Where independent transfers are feasible, alternative grab bar configurations shall be permitted. A mirror for resident use shall be provided in the toilet room.~~

~~8.2.B6. Each resident ~~bedroom~~ shall ~~have-be provided~~ a separate wardrobe, locker, or closet with minimum clear dimensions of 1 foot 10 inches (558.8 millimeters) depth by 1 foot 8 inches (508.~~

millimeters) width. A clothes rod and shelf shall be provided at heights accessible to the resident. Accommodations shall be made for storage of full-length garments. The shelf may be omitted if the unit provides at least two drawers.

8.2.B7. Visual privacy shall be provided for each resident in multiple-bed rooms. Design for privacy shall not restrict resident access to the toilet, room entrance, window, or other shared common areas in the resident room.

8.2.B8. Beds shall be no more than two deep from windows in new construction and three deep from windows in renovated construction.

8.2.B9. Resident rooms designated for ventilator dependency shall have one emergency powered duplex electrical outlet, one centrally piped oxygen outlet, and one centrally piped vacuum inlet.

8.2.C. Service Areas

The size and features of each service area will depend upon the number and types of residents served. Although identifiable spaces are required for each indicated function, consideration will be given to multiple-use design solutions that provide equal, though unspecified, areas. Service areas may be arranged and located to serve more than one resident unit, but at least one such service area shall be provided on each resident floor unless noted otherwise. Except where the words *room* or *office* are used, service may be provided in a multipurpose area. The following service areas shall be located in or be readily accessible to each resident unit:

***8.2.C1.** Staff work area(s). Resident units shall have staff work areas in central or decentralized direct care locations. Where caregiving is organized on a central staffing model, such work areas shall provide for charting or transmitting charted data and any storage or administrative activities. Where caregiving is decentralized, supervisory work areas need not accommodate charting activities; nor have direct visualization of resident rooms, because such functions shall be accomplished at the decentralized direct care staff work areas, which shall provide for charting or transmitting charted data and any storage or administrative activities required by the functional program. ~~Depending upon the type of service and care plan to be provided, direct care staff work areas need not be encumbered with all of the provisions for a supervisory administrative staff work area. In some decentralized arrangements, caregiving functions may be accommodated at a piece of residential furniture (such as a table or a desk) or at a work counter recessed into an alcove off a corridor or activity space, with or without computer and communications equipment, storage facilities, etc.~~

8.2.C2. Toilet room(s). They shall contain water closets with handwashing stations for staff and may be unisex.

8.2.C3. Lockable closets, drawers, or compartments ~~shall be provided~~ for safekeeping of staff personal effects such as handbags, ~~etc.~~

8.2.C4. Staff lounge area(s). These areas ~~shall be provided and~~ may be shared by more than one resident unit or service.

8.2.C5. Clean workroom or clean supply room. If the room is used for preparing resident care items, it

shall contain a work counter, a handwashing station, and storage facilities for clean and sterile supplies. If the room is used only for storage and holding as part of a system for distribution of clean and sterile materials, the work counter and handwashing station may be omitted.

8.2.C6. Soiled utility or soiled holding room. ~~This-It~~ shall contain a clinical sink or equivalent flushing-rim fixture with a rinsing hose or a bed-pan sanitizer, handwashing station, soiled linen receptacles, and waste receptacles in number and type as required by the functional program.

8.2.C7. Medication station. Provision shall be made for 24-hour distribution of medications. A medicine preparation room, a self-contained medicine--dispensing unit, or other system may be used for this purpose. The medicine preparation room, if used, shall be visually controlled from the staff work area. It shall contain a work counter, sink, refrigerator, and locked storage for controlled drugs. It shall have a minimum area of 50 square feet (4.65 square meters). A self-contained medicine--dispensing unit, if used, may be located at the staff work area, in the clean workroom, in an alcove, or in other space convenient for staff control. Convenient access to handwashing stations shall be provided. (Standard "cup"--sinks provided in many self-contained units are not adequate for handwashing.)

8.2.C8. Clean linen storage. A separate closet or designated area shall be provided. If a closed-cart system is used, storage may be in an alcove where staff control can be exercised.

8.2.C9. Nourishment station. The area shall contain a work counter, refrigerator, storage cabinets, and a sink for serving nourishments between meals. Ice for residents' consumption shall be provided by ice-maker units. Where accessible to residents and the public, ice-maker units shall be self-dispensing. Ice makers shall be located, designed, and installed to minimize noise (and may serve more than one nourishment station). The nourishment station shall include space for trays and dishes used for nonscheduled meal service and may also be used as a pantry for food service adjacent to a resident's dining room or area. Handwashing stations shall be in or immediately accessible from the nourishment station.

8.2.C10. Storage. Space for wheelchairs and other equipment shall be located away from normal traffic.

***8.2.C11.** Resident bathing facilities. A minimum of one bathtub or shower shall be provided for every 20 residents (or a major fraction thereof) not otherwise served by bathing facilities in resident rooms.

Residents shall have access to at least one ~~bathtub~~ bathing unit room per floor or unit, sized to permit assisted bathing in a tub or shower. The bathtub in this room shall be accessible to residents in wheelchairs, and the shower shall accommodate a shower gurney with fittings for a resident in a recumbent position. Other showers or tubs shall be in an individual room(s) or enclosure(s) with space for private use of the bathing fixture, for drying and dressing and access to a grooming location containing a ~~sink~~ handwashing station, mirror, and counter or shelf.

A separate toilet shall be provided within or directly accessible to each resident's bathing facility without requiring entry into the general corridor. ~~This-It~~ may also serve as the toilet--training facility.

8.3 Resident Support Areas

***8.3.A. Area Need**

The space needed for dining and recreation shall be determined by considering (a) needs of residents to use adaptive equipment and mobility aids and receive assistance from support and service staff; (b) the extent to which support programs shall be centralized or decentralized; and (c) the number of residents to be seated for dining at one time, as required by the functional program.

In new construction, the total area set aside for dining, resident lounges, and recreation ~~areas~~ shall be at least 35 square feet (3.25 square meters) per bed with a minimum total area of at least 225 square feet (20.90 square meters). At least 20 square feet (1.86 square meters) per bed shall be available for dining. Additional space may be required for outpatient day care programs.

For renovations, at least 14 square feet (1.30 square meters) per bed shall be available for dining. Additional space may be required for outpatient day care programs.

Nothing in these ~~g~~Guidelines is intended to restrict a facility from providing additional square footage per resident beyond what is required herein for dining rooms, activity areas, and similar spaces.

8.3.B. Storage

Storage space(s) for supplies, resident needs, and recreation shall be provided near their points of use, as required by the functional program.

8.3.C. Telephone

Provisions shall be made convenient to each nursing unit to allow residents to make and receive telephone calls in private, unless otherwise indicated by the functional program.

8.3.D Soiled Linen

A receiving, holding, and sorting room shall be provided for control and distribution of soiled linen.

Discharge from soiled linen chutes shall be received in a separate room.

***8.4 Activities**

If ~~included in~~required by the functional program, the minimum requirements for new construction shall include:

8.4.A. Storage for large items used for large group activities; (e.g., recreation and exercise equipment; materials, supplies for religious services), ~~etc.~~, placed near the location of the planned activity; and at the point of first use.

8.4.B. A space for small group and "one on one" activities, ~~which shall be~~ readily accessible to the residents.

***8.4.B1.** Space and equipment for carrying out each of the activities defined in the functional program.

8.4.B2. Resident toilet room(s) convenient to the area.

Nothing in these ~~g~~Guidelines is intended to restrict a facility from providing additional square footage per resident beyond what is required herein for activities.

8.5 Rehabilitation Therapy

Each nursing facility ~~which that~~ provides physical and/or occupational therapy services for rehabilitating long-term care residents shall have areas and equipment that conform to program intent. Where the nursing facility is part of a general hospital or other facility, services may be shared as appropriate.

8.5.A. Physical and Occupational Therapy Provisions: Inpatient/Outpatient

As a minimum, the following shall be located on-site, convenient for use:

8.5.A1. Space for files, records, and administrative activities.

8.5.A2. Provisions for wheelchair residents.

8.5.A3. Storage for supplies and equipment.

8.5.A4. Handwashing stations within the therapy unit.

8.5.A5. Space and equipment for carrying out each of the types of therapy that may be prescribed.

8.5.A6. Provisions for resident privacy.

8.5.A7. Housekeeping rooms, in or near unit.

8.5.A8. Resident toilet room(s), usable by wheelchair ~~residents~~occupants.

8.5.B. Physical and Occupational Therapy for Outpatients

If the program includes outpatient treatment, additional provisions shall include:

8.5.B1. Convenient facility access usable by the disabled.

8.5.B2. Facilities for dressing, and ~~L~~lockers for storing patients' clothing and personal effects.

8.5.B3. ~~Outpatient facilities for dressing.~~ Toilet facilities dedicated for outpatient use.

8.5.B4. Shower(s), if required by the functional program ~~for patients' use.~~

8.5.B5. Waiting area for outpatients and public. These shall be in addition to and separate from required resident support and activity areas. Public toilets shall be provided convenient to these waiting areas.

*8.6 Personal Services (Barber/Beauty) Areas

Facilities and equipment for resident hair care and grooming shall be provided separate from the resident rooms. These may be unisex and ~~can~~ may be located adjacent to central resident activity areas, provided that location and scheduling preserve patient dignity. Resident toilets shall be readily accessible to the hair

and grooming area(s).

***8.7 Subacute Care Facilities**

8.8 Alzheimer's and Other Dementia Units

***8.8.A. Safety:**

Safety concerns must be emphasized because of poor judgment inherent in those with dementia. Areas or pieces of furniture that could be hazardous to these residents ~~should~~ shall be eliminated or designed to minimize possible accidents.

8.8.A1. Doors. ~~The Resident~~ security ~~of the resident~~ shall be addressed through systems that secure the unit and comply with life safety codes. Should the functional program (see Section 1.1.F) justify limiting the movements of any resident(s) for their safety, any door locking arrangements shall be in full compliance with applicable requirements of NFPA 101. A secure unit shall contain appropriate activity area(s), dining, bathing, soiled linen/utility, and staff work area.

8.8.A2. Windows. Operable windows shall be permitted and shall comply with Sections 8.14.A3 and 8.14.A4.

***8.8.B. Outdoor Spaces:**

Secure outdoor gardens and lounge areas shall be available for residents of the Alzheimer's/dementia resident unit.

***8.8.C. Activities:**

Activity space for resident use in dementia programs shall be provided.

8.9 Dietary Facilities

The following services shall be provided:

8.9.A. General

Food service facilities and equipment shall conform with these standards and other applicable food and sanitation codes and standards and shall provide food service for residents.

Food receiving, storage, and preparation areas shall facilitate quality control. Provision shall be made for transport of hot and cold foods; as required by the functional program. Separate dining areas shall be provided for staff and for residents. The design and location of dining facilities shall encourage resident use.

Facilities shall ~~also~~ be furnished to provide nourishments and snacks between scheduled meal service.

The dietary facility shall be easy to clean and to maintain in a sanitary condition.

8.9.B. Functional Elements

If the dietary department is on-site, the following facilities, in the size and number appropriate for the type of food service selected, shall be provided:

8.9.B1. A control station for receiving and controlling food supplies.

8.9.B2. Storage space, including cold storage, for at least a four-day supply of food. (Facilities in remote areas may require proportionally more food storage facilities.)

8.9.B3. Food preparation facilities. Conventional food preparation systems require space and equipment for preparing, cooking, and baking. Convenience food service systems using frozen prepared meals, bulk packaged entrees, individual packaged portions, or those using contractual commissary services, require space and equipment for thawing, portioning, cooking, and ~~or~~ baking.

8.9.B4. Handwashing station(s) located in the food preparation area.

8.9.B5. Facilities for assembly and distribution of patient meals.

8.9.B6. Separate dining spaces for residents and staff.

8.9.B7. Ware-washing space ~~located~~ in a room or an alcove separate from the food preparation and serving area. Commercial-type ware-washing equipment shall be provided. Space shall ~~also~~ be provided for receiving, scraping, sorting, and stacking soiled tableware and for transferring clean tableware to the using areas. Convenient handwashing stations shall be available-provided.

8.9.B8. Pot-washing facilities.

8.9.B9. Storage areas and sanitizing facilities for cans, carts, and mobile-tray conveyors.

8.9.B10. Waste, storage, and recycling facilities (per local requirements) located in a separate room easily accessible to the outside for direct pickup or disposal.

8.9.B11. Office(s) or desk spaces for dietitian(s) and/or a dietary service manager.

8.9.B12. Toilet for dietary staff convenient to the kitchen area.

8.9.B13. A housekeeping room located within the dietary department. ~~This-It~~ shall include a floor receptor or service sink and storage space for housekeeping equipment and supplies.

8.9.B14. Ice-making facilities. The ~~yse~~ may be located in the food preparation area or in a separate room. They shall be easily cleanable and convenient to the dietary function.

8.10 Administrative and Public Areas

The following shall be provided:

8.10.A. Vehicular Drop-Off and Pedestrian Entrance

This shall be at grade level, sheltered from inclement weather, and accessible to the disabled.

8.10.B. Administrative/Lobby Area

This shall include:

- a. A counter or desk for reception and information.
- b. Public waiting area(s).
- c. Public toilet facilities.
- d. Public telephone(s).
- e. Drinking fountain(s).

8.10.C. General or Individual Office(s)

These shall be provided for business transactions, admissions, social services, medical and financial records, and administrative and professional staff. ~~There shall be included p~~rovisions for private interviews shall be included.

8.10.D. Multipurpose Room(s)

~~There shall be a~~ multipurpose room for conferences, meetings, and health education purposes shall be provided as required by the functional program; it shall include provisions for the use of visual aids. One multipurpose room may be shared by several services.

8.10.E. Office Space

Clerical files and staff office space shall be provided as required by the functional program.

8.10.F. Supply Room

Space for storage of office equipment and supplies shall be provided as required by the functional program.

8.11 Linen Services

8.11.A. General

Each facility shall have provisions for storing and processing of clean and soiled/contaminated linen for ~~appropriate~~ resident care. Processing may be done within the facility, in a separate building on- or off-site, or in a commercial or shared laundry. At a minimum, the following elements shall be included:

1. Separate central or decentralized room(s) for receiving and holding soiled linen ~~until ready~~ for pickup or processing. Such room(s) shall have proper ventilation and exhaust.
2. A central, clean linen storage and issuing room(s), in addition to the linen storage required at individual resident units.

3. Provisions ~~shall be made~~ for parking of clean and soiled linen carts separately and out of traffic and for cleaning of linen carts on premises (or exchange of carts off premises).

4. Handwashing stations in each area where unbagged, soiled linen is handled.

8.11.B. Off-Site Processing

If linen is processed off-site or in a separate building on-site, the following shall be provided ~~provisions shall also be made for~~:

1. A service entrance, protected from inclement weather, for loading and unloading of linen. This can be shared with other services and serve as the loading dock for the facility.

2. Control station for pickup and receiving. This can be shared with other services and serve as the receiving and pickup point for the facility.

8.11.C. On-Site Processing

If linen is processed in a laundry facility within the facility, the following shall be provided:

1. A receiving, holding, and sorting room for control and distribution of soiled linen. Discharge from soiled linen chutes may be received within this room or in a separate room adjacent to it.

2. Washers/extractors located between the soiled linen receiving and clean processing areas. Personal laundry, if decentralized, may be handled within one room or rooms, so long as there are separate, defined areas for handling clean and soiled laundry.

3. Storage for laundry supplies.

4. Linen inspection and mending area.

5. Arrangement of equipment that will permit an orderly work flow and minimize cross-traffic that might mix clean and soiled operations.

8.12 Housekeeping Rooms

Housekeeping rooms shall be provided throughout the facility as required to maintain a clean and sanitary environment. Each shall contain a floor receptor or service sink and storage space for housekeeping equipment and supplies. ~~There shall be a~~At least one housekeeping room shall be provided for each floor.

8.13 Engineering Service and Equipment Areas

The following shall be provided as necessary for effective service and maintenance functions:

8.13.A.

Room(s) or separate building(s) for boilers, mechanical, and electrical equipment.

8.13.B.

Provisions for protected storage of facility drawings, records, manuals, etc.

8.13.C.

General maintenance area for repair and maintenance.

8.13.D.

Storage ~~R~~room for ~~B~~uilding ~~M~~aintenance ~~S~~upplies.

Storage for solvents and flammable liquids shall comply with applicable NFPA codes.

8.13.E.

Yard equipment and supply storage areas, ~~shall be~~ located so that equipment may be moved directly to the exterior.

8.13.F.

Loading dock, and receiving and breakout area(s), if required by the functional program. These may be shared with other services.

8.13.G.

General storage space(s) ~~shall be provided~~ for furniture and equipment such as intravenous stands, inhalators, air mattresses, walkers, ~~ete.~~, medical supplies, and housekeeping supplies and equipment.

***8.14 General Standards for Details and Finishes**

Resident facilities require features that encourage ambulation of long-term residents. Signage and wayfinding features shall be provided to aid self-ambulating residents and avoid confusing or disorienting them. Potential hazards to residents, such as sharp corners, slippery floors, loose carpets, and hot surfaces ~~should~~ shall be avoided.

Renovations shall not diminish the level of compliance with these standards below that which existed prior to the renovation. However, features in excess of those for new constructions are not required to be maintained in the completed renovation.

8.14.A. Details

8.14.A1. The placement of drinking fountains, public telephones, and vending machines shall not restrict corridor traffic or reduce the corridor width below the minimum stipulated in NFPA 101.

8.14.A2. Doors to all rooms containing bathtubs, sitz baths, showers, and toilets for resident use shall be hinged, sliding, or folding.

8.14.A3. Windows and outer doors that may be left open shall have insect screens.

8.14.A4. Resident rooms or suites in new construction shall have window(s). Operable windows or vents that open from the inside shall be restricted to inhibit possible resident escape or suicide. Windows shall have sills located above grade, but no higher than 36 inches (914.4 millimeters) above the finished floor.

***8.14.A5.** Glazing in doors, sidelights, borrowed lights, and windows where glazing is less than 18 inches (457.2 millimeters) from the floor shall be constructed of safety glass, wire glass, tempered glass, or plastic glazing material that resists breaking and creates no dangerous cutting edges when broken. Similar materials shall be used in wall openings in activity areas (such as recreation rooms and exercise rooms) if permitted by local requirements. If doors are provided for shower and tub enclosures, glazing shall be safety glass or plastic.

8.14.A6. Thresholds and expansion joint covers shall be designed to facilitate use of wheelchairs and carts and to prevent tripping.

***8.14.A7.** Grab bars shall be installed in all resident toilets, showers, tubs, and sitz baths. For wall-mounted grab bars, a minimum 1-1/2-inch (38.1 millimeters) clearance from walls ~~shall be provided~~ **required**. Bars, including those which are part of fixtures such as soap dishes, shall have the strength to sustain a concentrated load of 250 pounds (113.4 kilograms). Toilets ~~utilized~~ **used** by residents shall be provided sufficient clearance on both sides of the water closet to enable physical access and maneuvering by staff, who may have to assist the resident in wheelchair-to-water-closet transfers and return. When independent transfers are feasible, alternative grab bar configurations shall be permitted.

***8.14.A8.** Where corridors are defined by walls, handrails shall be provided on both sides of all corridors normally used by residents. A minimum clearance of 1-1/2 inches (38.1 millimeters) shall be provided between the handrail and the wall. Rail ends shall be ~~returned to the wall or floor finished to minimize potential for personal injury~~.

8.14.A9. Handwashing stations shall be constructed with sufficient clearance for blade-type operating handles.

8.14.A10. Lavatories, ~~and~~ handwashing stations, and handrails ~~which that~~ a resident could use for support shall be securely anchored.

8.14.A11. Each resident handwashing station shall have a mirror. Mirror placement shall allow for convenient use by both wheelchair occupants and ~~or~~ ambulatory persons. Tops and bottoms may be at levels usable by individuals either sitting or standing, or additional mirrors may be provided for wheelchair occupants. One separate full-length mirror may serve for wheelchair occupants.

8.14.A12. Provisions for hand drying shall be included at all handwashing stations. These shall be paper or cloth towels enclosed to protect against dust or soil and to ensure single-unit dispensing.

8.14.A13. The minimum ceiling height shall be 7 feet 10 inches (2.39 meters), with the following exceptions:

a. Boiler rooms shall have ceiling clearances of at least 2 feet 6 inches (762 millimeters) above the main boiler header and connecting pipe.

b. Rooms containing ceiling-mounted equipment shall have the required ceiling height to ensure proper functioning of that equipment.

c. Ceilings in corridors, storage rooms, and toilet rooms shall be at least 7 feet 8 inches (2.34 meters). Ceilings in normally unoccupied spaces may be reduced to 7 feet (2.13 meters).

d. Building components and suspended tracks, rails, and pipes located along the path of normal traffic shall be not less than 7 feet (2.13 meters) above the floor.

e. In ~~buildings being renovation projects~~, all new work shall comply, insofar as practical, it is desirable to maintain minimum ceiling heights per with subparagraphs a through d above. Where existing conditions make compliance impractical or impossible, exceptions should be considered. However, in no case shall ceiling heights be reduced more than 4 inches (25.4 millimeters) below the minimum requirement for new construction.

f. Architecturally framed and trimmed openings in corridors and rooms shall be permitted, provided a minimum clear opening height of 7 feet (2.13 meters) is maintained.

8.14.A14. Rooms containing heat-producing equipment (such as boiler rooms, heater rooms, and laundries) shall be insulated and ventilated to prevent the floors of occupied areas overhead and the adjacent walls from exceeding a temperature of 10°F (6°C) above the ambient room temperature of such occupied areas.

8.15 Finishes

8.15.A.

Cubicle curtains and draperies shall be noncombustible or flame-retardant as prescribed in both the large- and small-scale tests in NFPA 701.

8.15.B.

Materials provided ~~by the facility~~ for finishes and furnishings, including mattresses and upholstery, shall comply with NFPA 101.

8.15.C.

Floor materials shall be readily cleanable and appropriate for the location. Floors in areas used for food preparation and assembly shall be water-resistant. Floor surfaces, including tile joints, shall be resistant to food acids. In all areas subject to frequent wet-cleaning methods, floor materials shall not be physically affected by germicidal cleaning solutions. Floors subject to traffic while wet (such as shower and bath areas, kitchens, and similar work areas) shall have a slip-resistant surface. Carpet and padding in resident areas shall be glued down or stretched taut and free of loose edges or wrinkles that might create hazards or interfere with the operation of wheelchairs, walkers, wheeled carts, etc.

8.15.D.

Wall bases in areas subject to routine wet cleaning shall be coved and tightly sealed.

8.15.E.

Wall finishes shall be washable and, if near plumbing fixtures, shall be smooth and moisture-resistant. Finish, trim, walls, and floor constructions in dietary and food storage areas shall be free from rodent- and

insect-harboring spaces.

8.15.F.

Floor and wall openings for pipes, ducts, and conduits shall be tightly sealed to resist fire and smoke and to minimize entry of pests. Joints of structural elements shall be similarly sealed.

8.15.G.

The finishes of all exposed ceilings and ceiling structures in resident rooms and staff work areas shall be readily cleanable with routine housekeeping equipment. Finished ceilings shall be provided in dietary and other areas where dust fallout might create a problem.

8.15.H.

Directional and identification signage shall comply with [Americans with Disabilities Act \(ADA\)](#) guidelines.

8.16 Construction Features

All parts of the nursing facility shall be designed and constructed to sustain dead and live loads in accordance with local and national building codes and accepted engineering practices and standards, including requirements for seismic forces and applicable sections of NFPA 101.

8.17-8.29 Reserved

8.30 Special Systems

8.30.A. General

8.30.A1. Prior to acceptance of the facility, all special systems shall be tested and operated to demonstrate to the owner or designated representative that the installation and performance of these systems conform to design intent. Test results shall be documented for maintenance files.

8.30.A2. Upon completion of the special systems equipment installation contract, the owner shall be furnished with a complete set of manufacturers' operating, maintenance, and preventive maintenance instructions, a parts list, and complete procurement information, including equipment numbers and descriptions. Operating staff ~~persons~~ shall also be provided with instructions for proper operation of systems and equipment. Required information shall include all safety or code ratings as needed.

8.30.A3. Insulation shall be provided surrounding special system equipment to conserve energy, protect personnel, and reduce noise.

8.30.B. Elevators

8.30.B1. All buildings having resident use areas on more than one floor shall have electric or hydraulic elevator(s). Installation and testing of elevators shall comply with ANSI/ASME A17.1 (for new construction) or ANSI/ASME 17.3 (for existing buildings). (See ASCE 7-93 for seismic design and control systems requirements for elevators.)

~~a.~~ Engineered traffic studies are recommended, but in their absence the following guidelines for minimum number of elevators shall apply (**Note:** these standards may be inadequate for moving large numbers of people in a short time; adjustments should be made as appropriate):

~~ba.~~ At least one elevator sized to accommodate a bed, gurney, and/or medical carts and wheelchair users shall be installed where residents are housed on any floor other than the main entrance floor.

~~eb. When-Where~~ 60 to 200 residents are housed on floors other than the main entrance floor, at least two elevators, one of which shall be of the hospital type, shall be installed.

~~ec. When-Where~~ 201 to 350 residents are housed on floors other than main entrance floor, at least three elevators, one of which shall be of the hospital type, shall be installed.

~~ed.~~ For facilities with more than 350 residents housed above the main entrance floor, the number of elevators shall be determined from a facility plan study and from the estimated vertical transportation requirements.

~~fe.~~ When the nursing facility is part of a general hospital, elevators may be shared and the standards of Section 7.30 shall apply.

***8.30.B2.** Cars of hospital-type elevators shall have inside dimensions that accommodate a resident bed with attendants. The clear inside dimension of such cars shall be at least 5 feet ~~4 inches~~ (~~1.52~~ 1.62 meters) wide by ~~78~~ feet ~~65~~ inches (~~2.29~~ 2.43 meters) deep. Car doors shall have a clear opening of not less than 3 feet 8 inches (1.12 meters). Other elevators required for passenger service shall be constructed to accommodate wheelchairs.

8.30.B3. Elevators shall be equipped with an automatic two-way leveling device with an accuracy of $\pm 1/4$ inch (7 millimeters).

8.30.B4. Elevators shall have handrails on all sides without entrance door(s).

8.30.C. Waste Processing Service

Facilities shall be provided for sanitary storage and treatment or disposal of waste and recyclables using techniques and capacities acceptable to the appropriate health and environmental authorities.

8.31 Mechanical Standards

8.31.A. General

8.31.A1. The mechanical system shall be subject to general review for operational efficiency and appropriate life-cycle cost. Details for cost-effective implementation of design features are interrelated and too numerous (as well as too basic) to list individually. Recognized engineering procedures shall be followed for the most economical and effective results. A well-designed system can generally achieve energy efficiency with minimal additional cost and simultaneously provide improved resident comfort. In no case shall resident care or safety be sacrificed for conservation.

8.31.A2. Facility design consideration shall include site, building mass, orientation, configuration, fenestration, and other features relative to passive and active energy systems.~~Facility design considerations shall include site, building, location, climate, orientation, configuration, and thermal requirements.~~

8.31.A3. As appropriate, controls for air-handling systems shall be designed with an economizer cycle to use outside air for cooling and/or heating.

8.31.A4. To maintain asepsis control, airflow supply and exhaust should generally be controlled to ensure movement of air from "clean" to "less clean" areas.

8.31.A5. Supply and return mains and risers for cooling, heating, and steam systems shall be equipped with valves to isolate the various sections of each system. Each piece of equipment shall have valves at the supply and return ends.

8.31.B. Thermal and Acoustical Insulation

8.31.B1. Insulation within the building shall be provided to conserve energy, protect personnel, prevent vapor condensation, and reduce noise.

8.31.B2. Insulation on cold surfaces shall include an exterior vapor barrier. (Insulating material that will not absorb or transmit moisture will not require a separate vapor barrier.)

8.31.B3. Insulation, including finishes and adhesives on the exterior surfaces of ducts, piping, and equipment, shall have a flame-spread rating of 25 or less and a smoke-developed rating of 50 or less as determined by an independent testing laboratory in accordance with NFPA 255.

8.31.B4. If duct lining is used, it shall be coated and sealed and shall meet ASTM C1071. These linings (including coatings, adhesives, and exterior surface insulation of pipes and ducts in spaces used as air supply plenums) shall have a flame-spread rating of 25 or less and a smoke-developed rating of 50 or less, as determined by an independent testing laboratory in accordance with NFPA 255. Duct lining ~~may~~shall not be installed within 15 feet (4.57 meters) downstream of humidifiers.

8.31.B5. In facilities undergoing major renovations, existing accessible insulation shall be inspected, repaired, and/or replaced as appropriate.

8.31.C. Steam and Hot Water Systems

8.31.C1. Boilers shall have the capacity, based on the net ratings published by the Hydronics Institute or another acceptable national standard, to supply not less than 70 percent of the normal requirements of all systems and equipment. Their number and arrangement shall accommodate facility needs despite the breakdown or routine maintenance of any one boiler. The capacity of the remaining boiler(s) shall be sufficient to provide hot water service for clinical, dietary, and resident use; steam for dietary purposes; and heating for general resident rooms. However, reserve capacity for facility space heating is not required in geographic areas where a design dry-bulb temperature of 25°F (-4°C) or more represents not less than 99 percent of the total hours in any one heating month, as noted in ASHRAE's *Handbook of Fundamentals*, under the "Table for Climatic Conditions for the United States."

8.31.C2. Boiler accessories, including feed pumps, heat-circulating pumps, condensate return pumps, fuel oil pumps, and waste heat boilers, shall be connected and installed to provide both normal and standby service.

8.31.D. ~~Air Conditioning, Heating, and Ventilation, and Air Conditioning~~ Systems

***8.31.D1.** The ventilation rates shown in Table 8.1, as applicable, shall be used only as minimum standards; they do not preclude the use of higher rates as appropriate. All rooms and areas in the facility shall have provision for positive ventilation. Space temperature and relative humidity shall be as indicated in Table 7.2. ~~Although natural window ventilation may be utilized where when weather and outside air quality permit, use of mechanical ventilation should shall be considered-provided for all rooms and interior areas in the facility and during periods of temperature extremes.~~ Non-central air-handling systems; (e.g., through-the-wall fan coil units); may be utilized. Fans serving exhaust systems shall be located at the discharge end and shall be readily serviceable. Exhaust systems may be combined to enhance the efficiency of recovery devices required for energy conservation.

For renovation projects, prior to the start of construction, and preferably during the design, airflow and static pressure measurements shall be taken at the connection points of new ductwork to existing systems. This information shall be used by the designer to determine if existing systems have sufficient capacity for the intended new purposes, and for any required modifications to the existing system to be included in the design documentation. Exhaust hoods handling grease-laden vapors in food preparation centers should comply with NFPA 96. All hoods over cooking ranges should be equipped with grease filters, fire-extinguishing systems, and heat-actuated fan controls. Cleanout openings should be provided every 20 feet (6.10 meters) and at changes in direction in the horizontal exhaust duct systems serving these hoods. (Horizontal runs of ducts serving range hoods should be kept to a minimum.)

8.31.D2. When appropriate, mechanical ventilation should employ an economizer cycle that uses outside air to reduce heating-and-cooling-system loads. Filtering will be necessary when outside air is used as part of the mechanical ventilation system. Innovative design that provides for additional energy conservation while meeting the intent of these standards for acceptable resident care should be considered.

8.31.D3. Fresh air intakes shall be located at least 25 feet (7.62 meters) from exhaust outlets of ventilating systems, combustion equipment stacks, medical-surgical vacuum systems, plumbing vents, or areas that may collect vehicular exhaust or other noxious fumes. (Prevailing winds and/or proximity to

other structures may require greater clearances.) The bottom of outdoor air intakes serving central ventilating systems shall be as high as practical, but at least 6 feet (1.83 meters) above ground level, or, if installed above roof, 3 feet (0.91 meter) above roof level. Exhaust outlets from areas that may be contaminated shall be above roof level, arranged to minimize recirculation of exhaust air into the building.

8.31.D4. The ventilation systems shall be designed and balanced to provide directional flow as shown in Table 8.1.

8.31.D5. All central ventilation or air conditioning systems shall be equipped with filters with efficiencies equal to, or greater than, those specified in Table 8.2. Filter efficiencies, tested in accordance with ASHRAE Standard 52-92, shall be average. Filter frames shall be durable and proportioned to provide an airtight fit with the enclosing ductwork. All joints between filter segments and the enclosing ductwork shall have gaskets or seals to provide a positive seal against air leakage. Provisions shall be made to allow access for field testing.

8.31.D6. Air-handling duct systems shall meet the requirements of NFPA 90A and those contained herein.

8.31.D7. Fire and smoke dampers shall be constructed, located, and installed in accordance with the requirements of NFPA 101, 90A, and the specific damper's listing requirements. Fans, dampers, and detectors shall be interconnected so that damper activation will not damage ducts. Maintenance access shall be provided at all dampers. All damper locations ~~should~~shall be shown on drawings. Dampers ~~should~~shall be activated by fire or smoke sensor, not by fan cutoff alone.

Switching systems for restarting fans may be installed for fire department use in evacuating smoke after a fire has been controlled. However, provisions ~~should~~shall be made to avoid possible damage to the system because of closed dampers.

When smoke partitions are required, heating, ventilating, and air conditioning zones shall be coordinated with compartmentation insofar as practical to minimize the need to penetrate fire and smoke partitions.

~~*8.31.D8. Non-central air-handling systems, e.g., through-the-wall fan-coil units, shall be equipped with permanent (cleanable) or replaceable filters rated at a minimum efficiency of 68 percent arrestance per ASHRAE Test Methods Standard 52.1-92. Noncentral air-handling systems (i.e., individual room units that are used for heating and cooling purposes) (fan-coil units, heat pump units, etc.) shall be equipped with permanent (cleanable) or replaceable filters. These units may be used as recirculating units only. All outdoor air requirements shall be met by a separate central air-handling system with the proper filtration, as noted in Table 8.2.~~

8.31.D9. Rooms with fuel-fired equipment shall be provided with sufficient outdoor air to maintain equipment combustion rates and to limit workstation temperatures.

8.31.E. Plumbing and Other Piping Systems

Unless otherwise specified herein, all plumbing systems shall be designed and installed in accordance with the *National Standard Plumbing Code*, chapter 14, Medical Care Facility Plumbing Equipment.

8.31.E1. The following standards shall apply to plumbing fixtures:

- a. The material used for plumbing fixtures shall be nonabsorptive.
- b. Water spouts used in lavatories and sinks shall have clearances adequate to avoid contaminating utensils and the contents of carafes, etc.
- c. All fixtures used by staff and all lavatories used by food handlers shall be trimmed with valves that can be operated without hands (single-lever devices may be used). Blade handles used for this purpose shall not exceed 4-1/2 inches (114.3 millimeters) in length. Handles on scrub sinks and clinical sinks shall be at least 6 inches (152.4 millimeters) long.
- d. Clinical sinks shall have an integral trap wherein the upper portion of the water trap provides a visible seal.
- e. Showers and tubs shall have a slip-resistant surface.

8.31.E2. The following standards shall apply to potable water supply systems:

- a. Systems shall be designed to supply water at sufficient pressure to operate all fixtures and equipment during maximum demand. Supply capacity for hot- and cold-water piping shall be determined on the basis of fixture units, using recognized engineering standards. When the ratio of plumbing fixtures to occupants is proportionally more than required by the building occupancy and is in excess of 1,000 plumbing fixture units, a diversity factor is permitted.
- b. Each water service main, branch main, riser, and branch to a group of fixtures shall have valves. Stop valves shall be provided for each fixture. Appropriate panels for access shall be provided at all valves where required.
- c. Vacuum breakers or Backflow prevention devices (vacuum breakers) shall be installed on hose bibs and supply nozzles used for connection of hoses or tubing in housekeeping sinks, bedpan-flushing attachments, etc.
- d. Potable water storage vessels (hot and cold) not intended for constant use shall not be installed.
- e. Systems shall be protected against cross-connection in accordance with American Water Works Association (AWWA) Recommended Practice for Backflow Prevention and Cross-connection Control.

8.31.E3. The following standards shall apply to hot water systems:

- a. The water-heating system shall have sufficient supply capacity at the temperatures and amounts indicated in Table 8.3. Water temperature is measured at the point of use or inlet to the equipment. Water shall be permitted to be stored at higher temperatures.
- b. Hot-water distribution systems serving resident care areas shall be under constant recirculation to provide continuous hot water at each hot water outlet. Non-recirculated fixture branch piping shall not

exceed 25 feet (7.62 meters) in length.

*c. Provisions shall be included in the domestic hot water system to limit the amount of *Legionella* bacteria and opportunistic water-borne pathogens.

d. Dead-end piping (risers with no flow, branches with no fixture) shall not be installed. In renovation projects, dead-end piping shall be removed. Empty risers, mains, and branches installed for future use shall be permitted.

8.31.E4. The following standards shall apply to drainage systems:

a. Insofar as possible, drainage piping shall not be installed within the ceiling or exposed in food preparation centers, food serving facilities, food storage areas, central services, electronic data processing areas, electric closets, and other sensitive areas. Where exposed overhead drain piping in these areas is unavoidable, special provisions shall be made to protect the space below from leakage, condensation, or dust particles.

b. Building sewers shall discharge into community sewerage. Where such a system is not available, the facility shall treat its sewage in accordance with local and state regulations.

c. Kitchen grease traps shall be located and arranged to permit easy access.

8.31.E5. Any installation of nonflammable medical gas, air, or clinical vacuum systems shall comply with the requirements of NFPA 99. When any piping or supply of medical gases is installed, altered, or augmented, the altered zone shall be tested and certified as required by NFPA 99.

8.31.E6. All piping, except control-line tubing, shall be identified. All valves shall be tagged, and a valve schedule shall be provided to the facility owner for permanent record and reference.

8.32 Electrical Standards

8.32.A. General

~~**8.32.A1.** All material and equipment, including conductors, controls, and signaling devices, shall be installed to provide a complete electrical system in accordance with NFPA 70 and NFPA 99.~~

~~**8.32.A2.** All electrical installations and systems shall be tested to verify that the equipment has been installed and that it operates as designed.~~

~~**8.32.A3.** Electrical systems for nursing facilities shall comply with applicable sections of NFPA 70.~~

~~**8.32.A4.** Lighting shall be engineered to the specific application.~~

~~*a. The Illuminating Engineering Society of North America (IES) has developed recommended minimum lighting levels for nursing facilities.~~

~~*b. Approaches to buildings and parking lots, and all occupied spaces within buildings shall have fixtures for lighting. Consideration shall be given to contrast in lighting levels.~~

~~*c. Resident rooms shall have general lighting and night lighting. A reading light shall be provided for each resident. Reading light controls shall be readily accessible to residents. At least one night light fixture in each resident room shall be controlled at the room entrance. All light controls in resident areas shall be quiet operating.~~

~~d. Resident unit corridors shall have general illumination with provisions for reducing light levels at night.~~
8.32.A4. Lighting shall be engineered to the specific application. Unless alternative lighting levels are justified by the approved functional program, Table 8.4 shall be used as a guide to minimum required ambient and task lighting levels in all rooms, spaces and exterior walkways.

*a. The Illuminating Engineering Society of North America (IESNA) has developed recommended lighting design practices, including minimum lighting levels for nursing facilities and other senior living environments, which in 2001 were adopted as an ANSI standard.

*b. Approaches to buildings and parking lots, and all occupied spaces within buildings, shall have fixtures for lighting. Consideration shall be given to both the quantity and quality of lighting, including contrast in lighting levels, glare control, the special lighting needs of the elderly, area-specific lighting solutions, the use of daylighting, the life cycle costs of lighting, and other lighting design practices as defined and described in ANSI/IESNA RP-28-01.

*c. Resident rooms and toilet rooms shall have general lighting, task lighting, and night lighting. At least one task light shall be provided for each resident. Task light controls shall be readily accessible to residents. At least one low-level night light fixture in each room shall be located close to the floor and controlled at the room entrance. When the approved functional program stipulates staff shall use portable light sources, flexibility may be permitted to omit night lights in resident rooms. All light controls in resident areas shall be quiet operating.

d. Resident unit corridors shall have general illumination with provisions for reducing light levels at night. Corridors and common areas used by residents shall have even light distribution to avoid glare, shadows and scalloped lighting effects. Highly reflective floors shall be avoided.

8.32.A5. Receptacles (convenience outlets) shall be provided as follows:

a. Each resident room shall have duplex-grounded receptacles. There shall be one at each side of the head of each bed and one on every other wall. Receptacles may be omitted from exterior walls where construction makes installation impractical.

b. Duplex-grounded receptacles for general use shall be installed approximately 50 feet (15.24 meters) apart in all corridors and within 25 feet (7.62 meters) of corridor ends.

c. Electrical receptacle coverplates or electrical receptacles supplied from the emergency system shall be distinctively colored or marked for identification. If color is used for identification purposes, the same color ~~should~~ shall be used throughout the facility.

d. Ground-fault-interrupters shall comply with NFPA 70.

8.32.B.-8.32.F Reserved

8.32.G. Nurse/Staff Call System

A nurse/staff call system shall be provided. Each bed location and/or resident shall be provided with a call device. Two call devices serving adjacent beds or residents may be served by one calling station. Calls shall be initiated by a resident activating either a call device attached to a resident's calling station, or a portable device ~~which~~ that sends a call signal to the calling station and shall either:

~~(a)~~ 1. Activate a visual signal in the corridor at the resident's door or other appropriate location. In multi-corridor or cluster resident units, additional visual signals shall be installed at corridor intersections; or

~~(b)~~ 2. Activate a pager worn by a staff member, identifying the specific resident and/or room from which the call has been placed.

An emergency call system shall be provided at each resident toilet, bath, sitz bath, and shower room. This system shall be accessible to a resident lying on the floor. Inclusion of a pull cord or portable radio frequency pushbutton will satisfy this standard.

The emergency call system shall be designed so that a call activated by a resident will initiate a signal distinct from the regular staff call system and that can be turned off only at the resident's location. The signal shall activate an annunciator panel or screen at the staff work area or other appropriate location, and at other areas defined by the functional program, and either a visual signal in the corridor at the resident's door or other appropriate location, or a staff pager indicating the calling resident's name and/or room location, ~~and at other areas defined by the functional program~~.

Alternate technologies ~~can~~ may be considered for emergency or nurse call systems. If radio frequency systems are used, consideration should [shall?] be given to electromagnetic compatibility between internal and external sources.

8.32.H. Emergency Electrical Service

8.32.H1. ~~As~~ At a minimum, nursing facilities or sections thereof shall have emergency electrical systems as required in NFPA 101 and Chapter 16, Nursing Home Requirements, of NFPA 99.

8.32.H2. When the nursing facility is a distinct part of an acute-care hospital, it may use the emergency generator system for required emergency lighting and power, if such sharing does not reduce hospital services. Life support systems and their respective areas shall be subject to applicable standards of Section 7.325.

8.32.H3. An emergency electrical source shall provide lighting and/or power during an interruption of the normal electric supply. Where stored fuel is required, storage capacity shall permit continuous operation for at least 24 hours. Fuel storage for electricity generation shall be separate from heating fuels. If the use of heating fuel for diesel engines is considered after the required 24-hour supply has been exhausted,

positive valving and filtration shall be provided to avoid entry of water and/or contaminants.

8.32.H4. A minimum of one dedicated essential system circuit per bed for ventilator-dependent patients ~~is required~~ shall be provided in addition to the normal system receptacle at each bed location required by NFPA 70. This circuit shall be provided with a minimum of two duplex receptacles identified for emergency use. Additional essential system circuits/receptacles shall be provided where the electrical life support needs of the patient exceed the minimum requirements stated in this paragraph. This paragraph shall apply to both new and existing facilities serving ventilator-dependent patients.

8.32.H5. Heating equipment provided for ventilator-dependent patient bedrooms shall be connected to the essential electrical system. This paragraph shall apply to both new and existing facilities.

8.32.H6. Task lighting connected to the essential electrical system shall be provided for each ventilator-dependent patient bedroom. This paragraph shall apply to both new and existing facilities.

8.32.H7. Exhaust systems (including locations, mufflers, and vibration isolators) for internal combustion engines shall be designed and installed to minimize objectionable noise. Where a generator is routinely used to reduce peak loads, protection of patient areas from excessive noise may become a critical issue.

8.32.I. Fire Alarm System

Fire alarm and detection systems shall be provided in compliance with NFPA 101 and NFPA 72

8.32.J. Telecommunication and Information Systems

8.32.J1. Locations for terminating telecommunications and information system devices shall be provided.

8.32.J2. A space shall be provided for central equipment locations. Special air conditioning and voltage regulation shall be provided when recommended by the manufacturer.