

SECTION .3400 - MECHANICAL: ELECTRICAL: PLUMBING

10A NCAC 13D .3401 HEATING AND AIR CONDITIONING

Heating and cooling systems shall meet the American Society of Heating, Refrigerating, and Air Conditioning Engineers Inc. Guide [which is incorporated by reference, including all subsequent amendments; copies of this document may be obtained from the American Society of Heating, Refrigerating & Air Conditioning Engineers Inc. at 1791 Tullie Circle NE, Atlanta, GA 30329 at a cost of one hundred nineteen dollars (\$119.00.)]; and the National Fire Protection Association Code 90A, [current addition with all subsequent amendments which is adopted by reference; copies of this code may be obtained from the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101 at a cost of nineteen dollars and fifty cents (\$19.50)] with the following modifications:

- (1) Drug rooms must have positive pressure with relationship to adjacent areas.
- (2) Environmental temperature control systems shall be capable of maintaining temperatures in the facility at 72 degrees F. minimum in the heating season and a maximum of 81 degrees F. during the non-heating season.
- (3) Rooms designated for isolation shall have negative or positive pressure with relationship to adjacent areas depending upon the type of patient to be isolated. Exhaust for isolation rooms shall be ducted to the outdoors with exhaust fans located at the discharge end of the duct.

*History Note: Authority G.S. 131E-104;
Eff. January 1, 1996.*

10A NCAC 13D .3402 EMERGENCY ELECTRICAL SERVICE

Emergency electrical service shall be provided for use in the event of failure of the normal electrical service. This emergency service shall consist of the following:

- (1) In any existing facility, the following shall be provided:
 - (a) type 1 or 2 emergency lights as required by the North Carolina State Building Code, Electrical Code;
 - (b) additional emergency lights for all nursing stations, drug preparation and storage areas, and for the telephone switchboard, if applicable;
 - (c) one or more portable battery-powered lamps at each nursing station; and

- (d) a suitable source of emergency power for life-sustaining equipment, if the facility admits or cares for occupants needing such equipment, to ensure continuous operation for a minimum of 72 hours.
- (2) Any new addition to an existing facility shall meet the same requirements as new construction.
- (3) Any conversion of an existing building (hotel, motel, abandoned hospital, abandoned school, or other building) shall meet the same requirements for emergency electrical services as required for new construction.
- (4) An emergency generating set, including the prime mover and generator, shall be located on the premises and shall be reserved exclusively for supplying the emergency electrical system.
- (5) Emergency electrical services shall be provided as required by Rule .3101(b) of this Subchapter with the following modifications:
 - (a) Section (B)(2) contained in Section 517-10 of the North Carolina State Building Code, Electrical Code shall not apply to new facilities.
 - (b) Egress lighting shall be connected to the essential electrical system at exterior of exits.
 - (c) Task illumination in the switchgear and boiler rooms shall be connected to the essential electrical system.
- (6) The following equipment, devices, and systems which are essential to life safety, and the protection of important equipment or vital materials shall be connected to the emergency electrical system as follows:
 - (a) nurses' calling system;
 - (b) fire pump if installed;
 - (c) sewerage lift or sump pumps if installed;
 - (d) one elevator, where elevators are used for vertical transportation of patients;
 - (e) equipment such as burners and pumps necessary for operation of one or more boilers and their necessary auxiliaries and controls, required for heating and sterilization, if installed;

- (f) equipment necessary for maintaining telephone service.
- (7) A minimum of one dedicated emergency branch circuit per bed for ventilator dependent patients is required in addition to the normal system receptacle at each bed location required by the North Carolina State Building Code, Electrical Code. This emergency circuit shall be provided with a minimum of two duplex receptacles identified for emergency use. Additional emergency branch circuits/receptacles shall be provided where the electrical life support needs of the patient exceed the minimum requirements stated in this Paragraph. Each emergency circuit serving ventilator dependent patients shall be fed from the automatically transferred critical branch of the essential electrical system. This Paragraph shall apply to both new and existing facilities.
- (8) Heating equipment provided for ventilator dependent patient bedrooms shall be connected to the critical branch of the essential electrical system and arranged for delayed automatic or manual connection to the emergency power source if the heating equipment depends upon electricity for proper operation. This Paragraph shall apply to both new and existing facilities.
- (9) Task lighting connected to the automatically transferred critical branch of the essential electrical system shall be provided for each ventilator dependent patient bedroom. This Paragraph shall apply to both new and existing facilities.
- (10) Where electricity is the only source of power normally used for space heating, the emergency service shall provide for heating of patient rooms. Emergency heating of patient rooms will not be required in areas where the facility is supplied by at least two separate generating sources, or a network distribution system with the facility feeders so routed, connected, and protected that a fault any place between the generators and the facility will not likely cause an interruption.
- (11) The emergency electrical system shall be so controlled that after interruption of the normal electric power supply, the generator is brought to full voltage and frequency and connected with 10 seconds through one or more primary automatic transfer switches to all emergency lighting, alarms, nurses' call, and equipment necessary for maintaining telephone service. All other lighting and equipment required to be connected to the emergency system shall either be connected through the 10 second primary automatic transfer switching or shall be subsequently connected through other automatic or manual transfer switching. Receptacles connected to the emergency system shall be distinctively marked for identification.

- (12) Sufficient fuel shall be stored for the operation of the emergency generator for a period not less than 72 hours, on a 24-hour per day operational basis. The generator system shall be tested and maintained per National Fire Protection Association (NFPA) code 99, current addition with all subsequent amendments, which is adopted by reference. Copies of this code may be obtained from the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101 at a cost of thirty one dollars (\$31.00). Records of running time shall be maintained and kept available for reference.
- (13) Existing facilities shall have electrical systems that comply with licensure standards in effect at the time a license is first issued. Any remodeling that results in changes in service delivery shall comply with current licensure requirements to support the delivery of those services.

*History Note: Authority G.S. 131E-104;
Eff. January 1, 1996.*

10A NCAC 13D .3403 GENERAL ELECTRICAL

- (a) All main water supply shut off valves in the sprinkler system shall be electronically supervised so that if any valve is closed an alarm will sound at a continuously manned central station.
- (b) No two adjacent emergency lighting fixtures shall be on the same circuit.
- (c) Receptacles in bathrooms shall have ground fault protection.
- (d) Each patient bed location shall be provided with a minimum of four single or two duplex receptacles. Two single receptacles or one duplex receptacle shall be connected to the critical branch of the emergency power system at each bed location. Each patient bed location shall also be provided with a minimum of two single receptacles or one duplex receptacle connected to the normal electrical system.
- (e) Each patient bed location shall be supplied by at least two branch circuits.
- (f) The fire alarm system shall be installed to transmit an alarm automatically to the fire department that is legally committed to serve the area in which the facility is located, by the most direct and reliable method approved by local ordinances.
- (g) In patient areas, fire alarms shall be gongs or chimes rather than horns or bells.
- (h) All receptacles in patient use areas must be grounded by an insulated conductor sized in accordance with Table 250-95 of the North Carolina State Building Code, Electrical Code.

*History Note: Authority G.S. 131E-104;
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10A NCAC 13D .3404 OTHER

(a) In general patient areas, each room shall be served by at least one calling station and each bed shall be provided with a call button. Two call buttons serving adjacent beds may be served by one calling station. Calls shall register with the floor staff and shall activate a visible signal in the corridor at the patient's or resident's door. In multi-corridor nursing units, additional visible signals shall be installed at corridor intersections. In rooms containing two or more calling stations, indicating lights shall be provided at each station. Nurses' calling systems which provide two-way voice communication shall be equipped with an indicating light at each calling station which lights and remains lighted as long as the voice circuit is operating. A nurses' call emergency button shall be provided for patients' and residents' use at each patient and resident toilet, bath, and shower.

(b) At least one telephone shall be available in each area to which patients are admitted and additional telephones or extensions as are necessary to ensure availability in case of need.

(c) General outdoor lighting shall be provided adequate to illuminate walkways and drive.

(d) A flow of hot water shall be within safety ranges specified as follows:

 Patient Areas - 6 1/2 gallons per hour per bed and at a temperature of 100 -116 degrees F; and

 Dietary Services - 4 gallons per hour per bed and at a minimum temperature of 140 degrees F; and

 Laundry Area - 4 1/2 gallons per hour per bed and at a minimum temperature of 140 degrees F.

(e) Plumbing systems shall meet the requirements of the North Carolina State Building Code, Plumbing Code.

(f) Medical gas and vacuum systems shall be installed, tested, and maintained in accordance with the National Fire Protection Code 99 current addition with all subsequent amendments, which is adopted by reference. Copies of this code may be obtained from the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101 at a cost of thirty one dollars (\$31.00).

(g) The Administrator shall assure that isolation facilities are available and used for any patient admitted or retained with a communicable disease.

(h) Each facility shall have a control system or procedure to aid staff in the supervision of patients who wander or are disoriented. This requirement shall apply to new and existing facilities.

*History Note: Authority G.S. 131E-104;
Eff. January 1, 1996.*