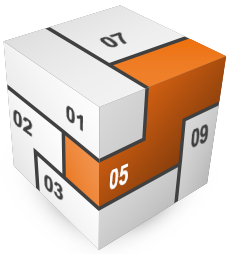
SECTION 5 – BUILDING SERVICES K 500s



Building Services - Utilities

HVAC, Electrical issues, Fire Places, Laundry, Elevators and Dampers

151

Smoke – Fire Damper ITM

- All dampers must be identified and made accessible and inspected.
  - Damper testing must be documented that indicates the damper location, type of damper, date of inspection, name of inspector, signature, disposition of test, and deficiencies discovered.
  - For fire dampers the fusible link must be removed and either cleaned or replaced
  - Test dampers to ensure there is no interference with rust; or bent metal, misaligned, or damaged frame, blades, or hinges
  - Damper frame must not be penetrated by foreign objects
  - Damper must not be blocked from closure

152

Fire Dampers

A typically mechanical device listed and installed in air ducts and transfer openings designed to close upon the detection of heat to resist the passage of flame. Fire dampers are classified either static systems that will automatically shut in the event in the event of a fire or dynamic systems that may operate during a fire. Dynamic fire dampers are tested and rated for closure under elevated temperature airflows.

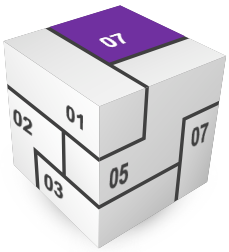
153

Laundry - Driers

- Recommended to have program for cleaning lint traps and dryer areas to ensure there is not a build up of lint in and around dryers
- Inspection and maintenance of dries to ensure limited build up of lint
- Should not dry greasy, oily rags which can combust
- Ensure there are no exhaust switchbacks or excessive long runs
- Common issue for dryer fires is inefficient or obstructed lint exhausting. Need to maintain frequently to ensure operating appropriately

154

SECTION 7 – OPERATING FEATURES K 700s



Operating Features

Fire Drills, Fire Door Inspection, Hazardous Materials. Smoking

155

Combustible Decorations K 753

- Combustible decorations shall be prohibited unless one of the following is met:
  - Flame retardant or treated with approved fire-retardant coating that is listed and labeled for product.
  - Decorations meet NFPA 701
  - Decorations exhibit heat release less than 100 kilowatts in accordance with NFPA 289.
  - Decorations, such as photographs, paintings and other art are attached to the walls, ceilings and non-fire-rated doors in accordance with 18.7.5.6 or 19.7.5.6.
  - The decorations in existing occupancies are in such limited quantities that a hazard of fire is not present.

156

Combustible Decorations

- New requirement
  - Photographs, paintings and 'other art' may not interfere with the operation
- Increases the amount of wall/ceiling space that may be covered:
  - 50% Sprinklered in patient room (less than 4) per wall or ceiling and not aggregated
  - Combustible decorations may not exceed 30 percent of the wall area in a sprinklered smoke compartment.

157

Flammable Decorations

- Decorations of highly flammable character
  - Corn stalks, hay bales, cut pine trees
  - Live potted plants with a root system are permissible

158

Permitted Candles

- Candles may be lit for religious ceremonies and birthdays.
- Staff present and supervising to ensure resident safety. Also, there should be no residents using oxygen present (within 20')

159

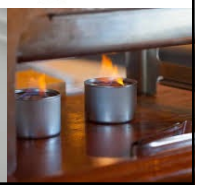
Candles

Candles shall not be used a decorative items unless the wick is removed

160

NO!

Sterno may not be used in a nursing home kitchen or buffet because it is an open flame/ flammable chemical



161

Diffusers and Aroma Devices – No-No!

- The code references under combustible decorations 19.7.5.6 contains the requirements for combustible decorations which was revised as follows:
- "Combustible decorations shall be prohibited in any health care occupancy, unless one of the following criteria is met:
- They are flame-retardant or are treated with approved fire-retardant coating that is listed and labeled for application to the material to which it is applied.
- The decorations meet the requirements of NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.
- The decoration exhibits a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, Standard Method of Fire Test for Individual Fuel Packages, using the 20-kW ignition source.

162

Draperies, Curtains, and Loosely Hanging Fabrics K 751

Draperies, Curtains, and Loosely Hanging Fabrics exempt at locations:

- Showers and baths
- On windows in patient sleeping room located in sprinklered compartments
- Non-patient sleeping rooms in sprinklered compartments
  - Do not exceed 48 square feet
  - Total area does not exceed 20% of the wall.

163

Upholstered Furniture K752

- Newly introduced upholstered furniture meets Class I or char length, and heat release unless the building is fully sprinklered.
- Upholstered furniture do not have to meet these requirements as all nursing homes are fully sprinklered.

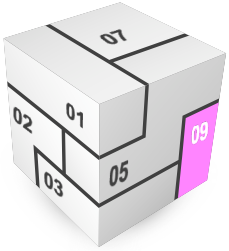
164

Soiled Linen and Trash Containers K754

- Receptables used for trash, recycling or dirty linen shall not exceed 32 gallons in capacity open to the corridor.
- The average density of container capacity in a room or space shall not exceed 0.5 gallons per square foot, therefore a total container capacity of 32 gallons shall not be exceeded within any 64 square feet area.
  - Receptacles with capacities greater than 32 gallons to 63 gallons shall be in a room protected with a door when not attended.
  - Containers 64-gallon capacity or greater shall be in a room protected with a door with an automatic closer (this is considered a hazardous space (K321)

165

HEALTH CARE FACILITIES CODE REQUIREMENTS K 900s

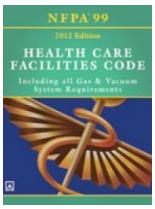


All the K tags 900+ are from NFPA 99 Health Care Facilities Code (2012)

166

NFPA 99 2012 Edition Health Care Facilities Code

- Standard become a Code with 2012 edition
- The code is intended for professionals involved in the design, construction, maintenance, and inspection of health care facilities (NFPA 101 Chapter 18-19 facilities), in addition to the design, manufacture, and testing of appliances and equipment used in patient care rooms of the health care facilities
- Unique because the code is based on Risk and an assessment as determined by the facility leadership



167

NFPA 99 Developed

- To provide level of safety to residents based on the risk to them given their circumstances
- Construction and equipment requirements shall be applied only to new construction, new equipment, new populations except as modified in individual chapters.
- An existing system that is not in strict compliance with the provisions of this code shall be permitted to be continued in use unless the authority having jurisdiction has determined that such use constitutes a distinct hazard to life

168

NFPA 99 - K901

Fundamentals – Building System Categories Building systems are designed to meet Category 1 through 4 requirements as detailed in NFPA 99. Categories are determined by a formal and documented risk assessment procedure performed by qualified personnel.

169

Chapter 5
Gas & Vacuum Systems Testing and Maintenance

5.1.14 Operations and Management

- Inventories
- Inspection schedules
- Inspection procedures
- Maintenance schedules
- Qualifications
- Inspection of labeling
- Maintenance and record keeping

170

Liquid Oxygen

- Section 11.5.2.2. of NFPA 99 discusses the requirements to follow for the transferring liquid oxygen (transfilling) from one container to another. Here is a summary:
- In a 1-hour rated storage room with 45-min door with auto-closer for rooms with up to 120 L
- The location must be mechanically ventilated
- The location must have ceramic flooring or concrete flooring
- The location must be posted with signs identifying transfilling is occurring
- The location must be posted with signs that says 'No Smoking'
- Transfilling must be accomplished utilizing equipment complying with CGA pamphlet P-2.6
- The use and operation of small portable liquid oxygen systems must comply with CGA pamphlet P-2.7

171

Gas Cylinder Storage 3000 ft^3 +

- Requirements for the storage of medical gas cylinders depends on the volume of gas. The greater the volume, the more stringent the requirements. For 3000 ft³ plus gas must be stored in locations that include the following:
- If outdoors
  - Secured doors or gates
  - Minimum of two entries/exits (if outdoors and greater than 200 ft2)
  - Enclosure of noncombustible construction – 30 min rated (if outdoors)
- Walls and floors with 1-hour fire resistance rating, and other openings with ¾-hour fire protection rating (if indoors)
- Racks, shelves, and supports of noncombustible material
- Access to move cylinders and equipment on hand trucks
- Electrical devices protected from physical damage

172

NFPA 99 Chapter 6 – Electrical Systems

- Increasingly one of the most common areas for deficiencies to be identified in Life Safety surveys. They are also likely to be the costliest to correct.
- Each has specific ITM requirements
  - Circuit Breaker Panels
  - Circuit Breakers
  - Circuit Breaker Wiring and branching
  - Circuit Break Labeling
  - Generator Transfer Switches
  - Generators
  - Receptables
  - GFCI
  - Personal Care Related Electrical Equipment (PCREE)

173

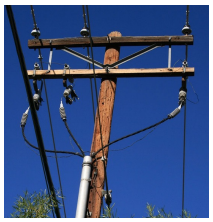
Essential Electrical

- Most people don't think too much about the essential electrical systems and expect everything to function properly, keeping them healthy and comfortable until they are again on their way.
- Paralleling the NFPA 99, Health Care Facilities Code, and Article 517 of the NEC, divide the various areas within healthcare facilities into four separate risk categories: these are spaces where electrical system failure is likely to cause major injury or death of patients, staff, or visitors. This involves areas where patients receive invasive procedures and are connected to line-operated, patient care–related appliances.

174

Essential Electric (Article 517 NFPA 70)

1. Determine how the facility is wired or circuited
   - Critical Branch
   - Life Safety Branch
   - Mechanical Branch
   - Normal Branch
2. Life Support or Not?
3. Size of Generator? (120kW -150KVA or greater???)
4. What is circuited to the generator?
5. Number of transfer switches?



175

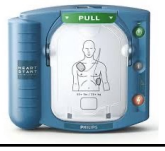
Circuit Breaker Panels NFPA 70 Article 517

- Facility must ensure that they have the right circuit breaker panels set up. There can be no mix panels, i.e. no mixing of circuits – critical, life safety, mechanical and normal together (all separate)
- Every panel must be labeled appropriately

176

Life Support Equipment

Life-saving equipment, where provided, appropriate alternate source of power. Life-saving equipment may include but shall not be limited to ventilators, AEDs, crash carts with defibrillators, intravenous therapy equipment, feeding pumps, IV pumps, nebulizer machines, suction equipment, medication dispensing machines and the refrigerator storing insulin.



177

EES Branches K 915

- Shall consist of separate branches to allow sequential transfer of power from the normal source to an alternate source for blocks of loads in order of priority and critical nature of the loads.
- The NEC Article 517
  - Consistent with NFPA 99 for EES Type 1 and is comprised of three separate branches (life safety, critical, and equipment).
  - EES Type 2, which is comprised of two separate branches (life safety and equipment), is only mentioned in NFPA 99. The Category 2 spaces are allowed to be served by an EES Type 1 that is serving the Category 1 spaces in the same facility.
- There are very few differences between EES Type 1 and Type 2, with the exception of critical power and how the power is distributed throughout the facility The life safety and critical branches shall be kept independent of all other wiring and equipment.

Transfer switches

- Separate transfer switches are required for each of the branches required by the EES Type 1 or 2 systems.
- Where maximum demand on EES is 150 kVA or less, a single transfer switch can be used to serve one or more branches together.

178

NFPA 99 (2012) EES Distribution - K 915

Life Safety Branch (6.4.2.2.3)	Critical Branch (6.4.2.2.4)	Equipment Branch (6.4.2.2.5)
• Means of egress illumination • 'Exit' signs • Communication systems when used for issuing instructions during emergencies • Generator task illumination • Battery charger for emergency lights at generator • Select receptacle at generator location • Elevator cab lighting, controls, communication and signal systems • Electrically powered doors used for egress • Fire alarm systems • Other alarm systems	Task illumination, fixed equipment, select receptacles, and select circuits for following areas and functions related to patient care: • Isolated power systems in special environments • Patient care rooms • Selected acute care nursing areas • Treatment rooms • Nurse's station • Additional specialized patient care task illumination and receptacles where needed • Nurse call systems • Telephone equipment rooms and closets • General care beds • Hemodialysis rooms or areas • Intensive care units • Additional task illumination, receptacles, and select power circuits needed for effective facility operation including single-phase fractional horsepower motors, permitted to be connected to the Critical Branch	Equipment permitted for delayed-automatic connection following the energizing of the Life Safety and Critical Branches: • Central suction systems serving medical functions • Sump pumps and other equipment • Smoke control • Kitchen hood supply or exhaust systems • Supply, return, and exhaust HVAC • Equipment permitted for delayed-automatic connection or manual connection: • Heating equipment • Jockey pumps for fire-sprinkler systems • Elevators selected to operate during normal power outage • Supply, return, and exhaust HVAC • Other selected equipment

179

Circuit Breaker Annual Inspection and Testing

Main and feeder circuit breakers shall be inspected annually, and a program for periodically exercising the components shall be established according to manufacturer's recommendations.

180

Non-Hospital Grade Receptacles Inspection

NFPA 99 6.3.3.2 lists the following elements annually:

- The physical integrity of each receptacle shall be confirmed by visual inspection
- The continuity of the grounding circuit in each electrical receptacle shall be verified
- Correct polarity of the hot and neutral connections in each receptacle shall be confirmed
- The retention force of the grounding blade of each receptacle (except locking-type receptacles) shall not be less than 4 oz.

181

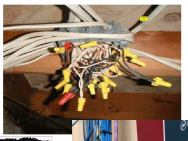
GFCI Receptacle Audit

- Water and electricity make a dangerous combination, and when you think about it, there are a lot of places in your FACILITY where the two can come into contact. GFCI outlet should be:
- Generally, within 6's of a water source including sinks, water lines, ice machines, refrigerators with ice automatic ice machines, coffee makers, fish tanks, water fountains, exterior outlets, etc.
- All facility exterior outlets but they should also have watertight covers that protect the outlets when in use and not in use.

182

Electrical Issues

- Inappropriate electrical wiring installation
- Uncovered outlet boxes.
- Are electrical outlet, receptacle and junction boxes covered?
- Is there an appropriate clearance in front of electrical service panels?
- Frayed or worn electrical cords
- Improper use or lack of protection of extension cord.



183

Generator - NFPA 110 (2010)

- 8.1.1 Routine maintenance and operational testing program based on the following:
  - Manufacturer's recommendations and Instruction manuals
  - Minimum requirements of this chapter
  - Authority having jurisdiction

184

Essential Electrical System

- The NFPA 99 Health Care Facilities Code calls the emergency power system in a health care facility an Essential Electrical System (EES) and defines it as follows:
  - "Essential Electrical System is a system comprised of alternate sources of power and all connected distribution systems and ancillary equipment, designed to ensure continuity of electrical power to designated areas and functions of a health care facility during a disruption of normal power sources, and also to minimize disruption within the internal wiring system."
- Regular inspection, maintenance, and testing are essential for both generators (NFPA 110) to guarantee their reliability during critical moments. Each NFPA standard related to EES defines very specific requirements which must be completed and documented. Retaining all records is crucial to demonstrating compliance.

185

Generator Annual Maintenance

- NFPA 110(10), Sec. 8.3.3 requires the establishment of a written schedule for routine generator maintenance and testing.
- Annual preventative maintenance for a generator typically includes changing the oil and filters (oil, fuel, and air), inspecting and cleaning the crankcase breather, replacing spark plugs, and potentially flushing the cooling system. It also involves a thorough visual inspection of the entire generator, including the electrical system, battery, and fuel lines.

186

Weekly Generator Inspection

- Visual inspection and documented Inspect unit whether running or not, including:
  - Transfer switch
  - Fuel levels, day tank float switch, piping, hoses
  - Connectors, operating fuel pressure, and for any obstructions to tank vents and overflow piping
  - Leaks
  - Oil (check for proper oil level and oil operating pressure; lube oil heater)
  - Lamps and control panel
  - Cooling system
  - Exhaust system
  - Electrical
  - Prime Mover

187

Generator Monthly Exercise K918

- Assure start time and system capabilities
- Transfer to alternate power source for minimum 30 minutes under operating temperature (not including warm up and cool down times)
- Record the meter reading time
- Manual or cold start using ATS test switch and document
- Immediate transfer to EPS within 10 sec.
- Run at a minimum of 30% of name plate rating for diesel engines - no minimum load for natural gas, propane or gasoline generators
- If diesel engines runs at less than 30% may use load bank test annually as alternate compliance method
- Test all connected transfer switch monthly

188

Monthly Exercise- Calculating % Load

- Ascertain the generator's standard volts
- Then document each phase (legs) of amps produced i.e., one or more phases (legs) added togehter and then divided by number to determine average amps
- Then calculate watts by multiplying the volts times the average amps times the square root of the number of phases
  - 1 phase = 1.0
  - 2 phase = 1.4142
  - 3 phase = 1.732
- Then take watts calcualted and divide by a 1000 to determine kilowatts
- Then take the kilowatt calculation and divide my generator's nameplate rating
- Take that resulting number and multiply by 100 to determine the percentage

189

Generator Load Example

- Generator at facility has nameplate rating of 80kWs @ 208 Volts
- Exercise is run and the following:
- Amps are recorded for the 3-phase generator
  - Phase 1 – 41 amps
  - Phase 2 – 44 amps
  - Phase 3 – 47 amps
  - Total – 132/3 = 44 ave. amps
  - 208v X 44 amps X 1.732 = 15,851 watts
  - 15,851 watts/ 1000 = 15.85 kW
  - 15.85kW/ 80kW nameplate = .1981
  - .1981 X 100 = 19.81%

190

Batteries

- Maintainable and Maintenance-free batteries are both permitted in LTC facilities
- Maintainable
  - Check electrolyte levels weekly
  - Conduct electrolyte specific gravity testing each month in each cell
- Immediate replacement of defective batteries

191

Maintenance-free Battery

- Battery conductance is a rapid and repeatable electrical measurement that determines the ability of a battery to transmit current readily through its internal electro- chemical structure.
- Conductance is an indication of battery state-of-health as well as a function of the charge state of a battery.
- **NFPA 8.3.7*** Storage batteries, including electrolyte levels or battery voltage, used in connection with systems shall be inspected weekly and maintained in full compliance with manufacturer's specifications.
- **NFPA 110 - 8.3.7.1** Maintenance of lead-acid batteries shall include the monthly testing and recording of electrolyte specific gravity. Battery conductance testing shall be permitted in lieu of the testing of specific gravity when applicable or warranted.

192

36-Month Exercise

- Full ESS system exercised at least once every 36 months for 4-hour duration at load.
- Transfer to alternate power source for minimum 4 hours under operating temperature (not including warm up and cool down times)
- Record the meter reading time
- Manual or cold start using ATS test switch and document

193

Load Bank Exercise

- Alternate compliance for DIESEL generators that do not operate at 30% of nameplate rating a facility may use a Load Bank test
- The generator is exercised annually for 90 minutes (30 min @ 50% and 60 minutes @ 75%)

194

K 918 Remote Stop

- Remote location means that it shall be located remote from the generator, so it is protected from the impact of adverse generator conditions. The owner and designer determine the location. For example:
  1. For generators located within a building, the remote stop station must be in a different room than the generator and be separated by a wall and door.
  2. For generators located outside, the remote stop station must be located anywhere outside of the generator and its enclosure.

195

Generator Remote Stop Switch

- 5.6.5.6 All installations shall have a remote manual stop station of a type to prevent inadvertent or unintentional operation located outside the room housing the prime mover, where so installed, or elsewhere on the premises where the prime mover is located outside the building.
- 5.6.5.6.1 The remote manual stop station shall be labeled.
- Remote location means that it shall be located remote from the generator, so it is protected from the impact of adverse generator conditions. The owner and designer determine the location.

196

Generator Annunciator Panel K 916

A remote annunciator is provided to operate outside of the generator/transfer switch room in a location readily observed by operating personnel at a regular workstation. The annunciator shall have visual signals when:

- The generator is running and suppling power to load
- When the battery charger is malfunctioning
- There should be individual visual and auditable signals indicating the following:
  - Low lubricating oil pressure
  - Low water temperature
  - Excessive water temperature
  - Low fuel (indicating less than 4-hours remaining
  - Overcrank (failed to start)
  - Overspeed (operating too fast)

197

Generator Diesel Fuel Annual Testing

NFPA 110 requires a PASSING diesel and fuel oil quality test to be performed annually using the approved ASTM standards.

This is required for diesel and fuel oil

198

Generator Signage

NFPA 30 21.7.2.1 Identification for Emergency Responders. A sign or marking that meets the requirements of NFPA 704 or another approved system shall be applied to storage tanks containing liquids. The marking shall be located where it can be seen, such as on the side of the tank, the shoulder of an accessway or walkway to the tank or tanks, or on the piping outside of the diked area. If more than one tank is involved, the markings shall be so located that each tank can be identified.

199

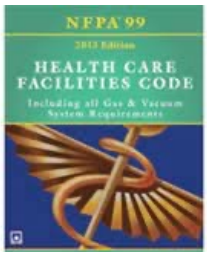
Generator K 918

- Protection of generator, gas lines, and other critical equipment that could be struck by cars, trucks, etc. must be protected.

200

Chapter 10 – Electrical Equipment

- Applies to new and existing
- Performance, maintenance, and testing of electrical equipment.
- Confirm physical integrity by visual inspection
- Verify resistance of appliances in patient care vicinity with grounding pin
- Power cords connected in accordance with conventions of a grounded system



201

Patient-Care-Related Electrical Equipment (PCREE) Annual Testing

- The development of a facility policy and procedure for the testing and maintenance
- Testing intervals (10.5.2.1) is to be established by the facility policy and procedures.
- Testing and inspection of all PCREE before it is put into service and after any repair or modification (10.5.2.1.2).
- Electrical equipment appliance that is intended to be used for diagnostic, therapeutic, or monitoring purposes in a patient care vicinity.
- Manufacturer's service manuals for each piece of PCREE must be readily available
- Documentation must be maintained, with records kept as required by the facility's record retention policy.
- Tests should include:
  - Physical integrity
  - Resistance
  - Leakage current
  - Touch current
  - Unique equipment ID number (what was tested)
  - What was met and not met during the test (result)

202

Why is Electrical Safety Testing?

Electrical safety testing of medical equipment is essential to ensure the safety of both residents and and healthcare workers, as well as the reliable operation of medical devices. Here are several key reasons why electrical safety testing is crucial:

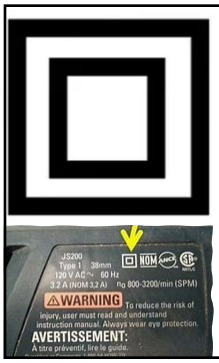
- Protecting Patient Safety
- Preventing Electrical Shocks:
- Ensuring Equipment Grounding:
- Ensuring Reliability of Life-Support and Critical Devices
- Preventing Device Malfunction and Consistent Performance
- Reducing Equipment Downtime
- Safeguarding Healthcare Workers

203

Electrical Equipment K921

- For electrical items that are either non-patient Care Related Electrical Equipment and/or Resident Owned Electronics
  - Facility policy Have a facility policy and procedure for inspecting electronics.
    - Inspection frequency
    - Who conducts the inspection
    - Inspection criteria and documentation
    - How you inform residents and families of the inspection process
      - Includes common items such as cell phones/chargers, tablets, lamps, alarm clocks, etc.
- Inspection focuses on identifying any items indicative of an unsafe condition.
  - Damaged equipment housing
  - Frayed cords
  - Damaged plugs
  - Exposed wires
- Electronics need to have a grounding conductor or be double insulated.

204



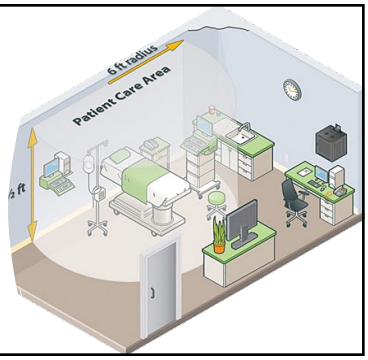
Double Insulated

- Double insulated refers to electrical appliances designed with two layers of insulation to protect users from electric shock.
- These appliances do not require a connection to electrical earth (ground) and are classified as Class II appliances.
- The double insulation ensures that even if the basic insulation fails, the user remains protected from electrical currents.
- The devices has been designed so that the live wire can not touch the casing. As a result, the casing can not give an electrical shock, even if the wire inside becomes loose

205

Patient Care Vicinity

- *A space, within a location intended for the examination and treatment of patients, extending 1.8 m (6 ft) beyond the normal location of the patient bed, chair, table, treadmill, or other device that supports the patient during examination and treatment and extending vertically to 2.3 m (7 ft 6 in.) above the floor.*



206

Permissible Power Taps

- **Resident Room**
  - **Vicinity of patient bed**
    - Yes- PCREE may use power taps that are UL 1363A or UL 60601-1 approved and listed
    - No – Not PCREE - no power taps permitted of any type or rating
- **Offices**
  - **UL Approved power taps only**

207

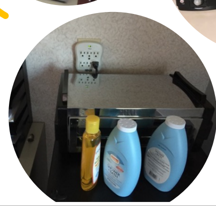
F0689 SS = SQC-J	Continued from page 5 1. On 7/15/25 at 12:09 PM observed an unapproved coded extension cord in Resident #1's room. The extension cord had a plug connected into the outlet on the wall with a fan running connected directly into the receptacle (end of extension cord that cords plug into) of the extension cord. The observation revealed the receptacle had half of the outer casing removed, exposing the inner metal electrical connecting devices, and exposed wires from the cord itself. When asked to intervene related to the immediacy of the observation, the Administrator picked up the cord as the receptacle made a loud popping sound and sparked. The Administrator reflexively threw the device on the floor which left 2 black burn marks on the linoleum type flooring. At the same time the Administrator confirmed the extension cord as a regular code device with no special coding (proper nursing facility code device for fire safety). The Administrator called Staff A, Maintenance, who arrived and unplugged the extension cord from the receptacle. Staff A connected a surge protector into the same receptacle and then plugged the fan into the surge protector. A picture dated 7/15/25 at 12:09 PM showed the cord of the extension cord used in the resident's room with black marks on the extension cord left on the floor when the Administrator dropped it after it had the large spark. A picture dated 7/15/25 at 2:25 PM revealed the fan connected to the extension cord at the time of the spark with the intervention by maintenance staff to have plugged the device directly into a surge protector. An undated Electric Surge Protector/Power Strip Policy directed that due to the regulations set for by the Iowa State Fire Marshal, the use of facility approved surge protector/power strip guidelines included fans as an unapproved device. An Electrical Safety for Residents policy and procedure revised January 2011 indicated the Policy Statement identified the facility would protect residents from injury associated with the use of electrical devices, including electrocution, burns, and a fire. The policy instructed the following: Inspection of electrical outlets, extension cords, power strips and electrical devices as part of the routine fire safety and maintenance inspections.When using extension cords, the following precautions must take place:Assurance the type of cord used remained the appropriate of the size and type of electrical load.Assurance the cords maintained proper grounding.	F0689

IJ For Power Strip

208

Power Strips Cannot!

- No Medical equipment thought-out the facility unless in a UL 1363A or UL 60601
- No appliances or items which use a lot of electricity such as items which HEAT and COOL including
  - Heaters
  - Hair Dryers
  - Microwaves
  - Hotpots
  - Toasters
  - Coffee Pots
  - Kerger's
  - Air Conditioners
  - Refrigerators
- They cannot be 'daisy-chained' together to increase length.
- They cannot be attached to a wall and made 'permanent' electric per NFPA 70 NEC
- Cannot be covered by a carpet or other materials.
- They may be used in offices for equipment such as televisions, DVD players, computers, etc.



209

Multi Plug Adapters

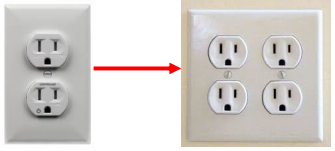
NO!

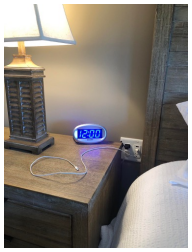
These are NOT approved for any location in a healthcare facility

210

Solution to Power Strips Addiction

Up-grade from Dual Receptacle to Quad Outlet





A rule of thumb for loading circuits in a health care facility is a maximum of 8 duplex receptacles per 120V 20-amp circuit

211

Chargers

- Chargers are NOT power taps, but a USB charger is a low-voltage Class 2 power supply, not an AC power distribution device, it falls under Article 725, not Article 400 of NFPA 70 which states that That's why it's not a "power tap" under the NEC.

212

Chapter 11
Gas Equipment

Applies to the use of nonflammable medical gas, vapors and aerosols, and equipment required for both in new and existing facilities

213

FACTS ABOUT OXYGEN

- Is a drug and is regulated by the State and Food and Drug Administration
- May only be used under physician order
- May only be administrated by licensed professional
- Is an Oxidizer and contact with combustibles may increase fire
- Is Non-Flammable by itself

214

Storage Issues

In addition to the criteria for storage locations are numerous other precautions that must be observed in the use and handling of cylinders.

- Cylinders in resident rooms, dining room, med -crash cart etc. are not considered to be storage
- Cylinders that are in use must be attached to a cylinder stand or to medical equipment designed to receive and hold cylinders.

215

O2 storage- up to 300cu.ft.

- O2 may be kept open to corridor such as behind nursing station or an individual container of medical gas placed in a patient room for “as needed” use for resident is not required to be stored in an enclosure, when properly secured.

216

O2 Storage 300 cu.ft. to 3000 cu.ft. K923

Door must be secured (locked) with automatic closer
A precautionary sign readable from 5 feet is of a cylinder storage room, wording as a minimum:

- Cylinders are in non-combustible racks or carts
- Empty cylinders are segregated from full cylinders.
- Empty cylinders should be marked to avoid confusion.
- No storage of combustible materials or flammable materials within 5'
- Resident rooms and areas where oxygen is used needs to have oxygen signage when smoking is allowed on property

11.3.1, 11.3.2, 11.3.3, 11.3.4, 11.6.5 (NFPA 99)

217

Storage O^2

Storage 300 to 3,000 cu ft.

- Storage between 300cu.ft. and 3000 cu.ft. must be in a storage room
  - Outdoor enclosure must be secured with appropriate signage
  - Minimum distance of 5 feet from combustible materials
  - No smoking, or open flames are electrical heating
  - Cylinders chained and supported in non-combustible stand or cart
  - Shed maintained secured (locked)

218

Safe Transporting of O2 Cylinders

- Oxygen cylinders always needs to be secured when transporting such as wheeled carts designed for cylinder transportation, brackets, or pouches etc.
- Oxygen cylinders need to be stored in a secure fashion in non-combustible racks or chain methods
- Oxygen cylinders MUST NEVER be left free standing in upright position without being secured
- Never carry a cylinder by the regulator or valve
- Never drag or roll a cylinder
- Do not hold on to the protective caps or guards while transporting cylinders

219

Gas Equipment K926

- Personnel concerned with the application and maintenance of medical gases and others who handle medical gases and the cylinders that contain the medical gases shall be trained on the risks associated with their handling and use.
- Facilities provide continuing education, including safety guidelines and usage requirements. Equipment is serviced only by personnel trained in the maintenance and operation of equipment. 11.5.2.1 (NFPA 99)

220

Strongly recommend placing sign on or by beauty shop door indicating "NO OXYGEN EQUIP. PERMITTED IN BEAUTY SHOP"

Resident using O2 while under hair dryer in beauty shop which has at times been judged an IJ

221

Survey and Compliance

- Remember many of you here are responsible for maintaining the largest asset of the owner
- Develop a comprehensive Life Safety complaint program which focuses on documentation compliance as well as preventative maintenance which would address potential issues
- Need to conduct periodic audits of facility systems
- Developing quick plans of action
- Mock surveys can be very helpful
- Each of these offer a clear opportunity for compliance and to avoid costly deficiencies.

222

Compliance Expectation

- Understand your systems and expected documents
- Test your stuff on-time
- Test your stuff properly
- Document the test properly
- Account for the repair of deficiencies
- HAVE IT ALL AVAILABLE

223

Kenneth Daily, LNHA
Elder Care Systems Group

kenn@qissurvey.com

- Consulting and education focusing on quality improvement, survey compliance, disaster preparation and facility management.
- Disaster preparedness planning
- Mock surveys and audits
- Fire Safety Evaluation System audits
- Policy and procedure development
- Professional development and training

224

Life Safety Code Tabs and Documentation

$300

- 50+ Tabs with explanations of Code required documentation
- Provided QR code with editable forms
- Examples of facility documentation which can be edited

Send check to: Kenneth Daily, ECSG, 3608 Bethany Ct., Dayton, OH 45415

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