Effective Date: July 1, 2025

Program: Hospital

Chapter: Environment of Care

Standard: EC.02.05.01

The hospital manages risks associated with its utility systems.

Introduction: Not Applicable.

Rationale: Not Applicable.

Elements of Performance

1. The hospital designs and installs utility systems according to National Fire Protection Association codes to meet patient care and operational needs.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41		ESP-1

2. New building systems and modifications to existing building systems are designed to meet the National Fire Protection Association's Categories 1–4 requirements. (For full text, refer to NFPA 99-2012: Chapter 4 for descriptions of the four categories related to gas, vacuum, electrical, and electrical equipment.)

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(c)		ESP-1

3. For hospitals that do not use Joint Commission accreditation for deemed status purposes: The hospital maintains a written inventory of all operating components of utility systems or maintains a written inventory of selected operating components of utility systems based on risks for infection, occupant needs, and systems critical to patient care (including all life-support systems). The hospital evaluates new types of utility components before initial use to determine whether they should be included in the inventory.

   For hospitals that use Joint Commission accreditation for deemed status

purposes: The hospital maintains a written inventory of all operating components of utility systems.

EP Attributes

New	FSA	CMS	DOC	ESP
	R Risk Area Environment of Care	§482.41(d)(2)	D	ESP-1

4. The hospital identifies high-risk operating components of utility systems on the inventory for which there is a risk of serious harm or death to a patient or staff member should the component fail.
Note: High-risk utility system components include life-support equipment.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)	D	ESP-1

5. The hospital identifies the activities and associated frequencies, in writing, for inspecting, testing, and maintaining all operating components of utility systems on the inventory.
Note: For guidance on maintenance and testing activities for Essential Electric Systems (Type I), see NFPA 99-2012: 6.4.4.

EP Attributes

New	FSA	CMS	DOC	ESP
	R Risk Area Environment of Care	§482.41(d)(2)	D	ESP-1

6. For hospitals that use Joint Commission accreditation for deemed status purposes: The hospital's activities and frequencies for inspecting, testing, and maintaining the following items must be in accordance with manufacturers' recommendations:
- Equipment subject to federal or state law or Medicare Conditions of Participation in which inspecting, testing, and maintaining be in accordance with the manufacturers' recommendations, or otherwise establishes more stringent maintenance requirements
- New operating components with insufficient maintenance history to support the use of alternative maintenance strategies

Note: Maintenance history includes any of the following documented evidence:
- Records provided by the hospital's contractors
- Information made public by nationally recognized sources
- Records of the hospital's experience over time

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)	D	ESP-1

7. For hospitals that use Joint Commission accreditation for deemed status purposes: A qualified individual(s) uses written criteria to support the determination of whether it is safe to permit operating components of utility systems to be maintained in an alternate manner that includes the following:
   - How the equipment is used, including the seriousness and prevalence of harm during normal use
   - Likely consequences of equipment failure or malfunction, including seriousness of and prevalence of harm
   - Availability of alternative or backup equipment in the event the equipment fails or malfunctions
   - Incident history of identical or similar equipment
   - Maintenance requirements of the equipment

   (For more information on defining staff qualifications, refer to Standard HR.01.01.01)

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)	D	ESP-1

8. For hospitals that use Joint Commission accreditation for deemed status purposes: The hospital identifies operating components of utility systems on its inventory that are included in an alternative equipment maintenance program.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)	D	ESP-1

9. The hospital labels utility system controls to facilitate partial or complete emergency shutdowns.
   Note 1: Examples of utility system controls that should be labeled are utility

source valves, utility system main switches and valves, and individual circuits in an electrical distribution panel.
Note 2: For example, the fire alarm system's circuit is clearly labeled as Fire Alarm Circuit; the disconnect method (that is, the circuit breaker) is marked in red; and access is restricted to authorized personnel. Information regarding the dedicated branch circuit for the fire alarm panel is located in the control unit. For additional guidance, see NFPA 101-2012: 18/19.3.4.1; 9.6.1.3; NFPA 72-2010: 10.5.5.2.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(a)		ESP-1

10. The hospital has written procedures for responding to utility system disruptions.

EP Attributes

New	FSA	CMS	DOC	ESP
	R Risk Area Environment of Care	§482.41(a) §482.41(a)(2)	D	ESP-1

11. The hospital's procedures address shutting off the malfunctioning system and notifying staff in affected areas.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(a) §482.41(a)(2) §482.41(d)(2)		ESP-1

12. The hospital's procedures address performing emergency clinical interventions during utility system disruptions.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(a) §482.41(a)(2)		ESP-1

13. The hospital responds to utility system disruptions as described in its procedures.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(a) §482.41(a)(2)		

15. In critical care areas designed to control airborne contaminants (such as biological agents, gases, fumes, dust), the ventilation system provides appropriate pressure relationships, air-exchange rates, filtration efficiencies, temperature, and humidity. For new and existing health care facilities, or altered, renovated, or modernized portions of existing systems or individual components (constructed or plans approved on or after July 5, 2016), heating, cooling, and ventilation are in accordance with NFPA 99-2012, which includes 2008 ASHRAE 170, or state design requirements if more stringent.
Note 1: For hospitals that use Joint Commission accreditation for deemed status purposes: Existing facilities may elect to implement a Centers for Medicare & Medicaid Services (CMS) categorical waiver to reduce their relative humidity to 20% in operating rooms and other anesthetizing locations. Should the facility elect the waiver, it must be included in its Basic Building Information (BBI), and the facility's equipment and supplies must be compatible with the humidity reduction. For further information on waiver and equivalency requests, see https://www.jointcommission.org/resources/patient-safety-topics/the-physical-environment/life-safety-code-information-and-resources/.
Note 2: For hospitals that use Joint Commission accreditation for deemed status purposes: Existing facilities may comply with the 2012 NFPA 99 ventilation requirements or the ventilation requirements in the edition of the NFPA code previously adopted by CMS at the time of installation (for example, 1999 NFPA 99). (See also IC.07.01.01, EP 1)

EP Attributes

New	FSA	CMS	DOC	ESP
	R Risk Area Environment of Care	§482.41(d)(2) §482.42	D	ESP-1

16. In non–critical care areas, the ventilation system provides required pressure relationships, temperature, and humidity.
Note: Examples of non–critical care areas are general care nursing units; clean

and soiled utility rooms in acute care areas; laboratories, pharmacies, diagnostic and treatment areas, food preparation areas, and other support departments.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(4)		ESP-1

17. The hospital maps the distribution of its utility systems.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(a)	D	ESP-1

18. Medical gas storage rooms and transfer and manifold rooms comply with NFPA 99-2012: 9.3.7.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d) §482.41(c)		ESP-1

19. The emergency power supply system's equipment and environment are maintained per manufacturers' recommendations, including ambient temperature not less than 40°F; ventilation supply and exhaust; and water jacket temperature (when required). (For full text, refer to NFPA 99-2012: 9.3.10)

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d) §482.41(c)		ESP-1

20. Operating rooms are considered wet procedure locations, unless otherwise determined by a risk assessment authorized by the facility governing body. Operating rooms defined as wet locations are protected by either isolated power or ground-fault circuit interrupters. A written record of the risk assessment is maintained and available for inspection. (For full text, refer to NFPA 99-2012: 6.3.2.2.8.4; 6.3.2.2.8.7; 6.4.4.2)

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)	D	ESP-1

21. Electrical distribution in the hospital is based on the following categories:
- Category 1: Critical care rooms served by a Type 1 essential electrical system (EES) in which electrical system failure is likely to cause major injury or death to patients, including all rooms where electric life support equipment is required.
- Category 2: General care rooms served by a Type 1 or Type 2 EES in which electrical system failure is likely to cause minor injury to patients.
- Category 3: Basic care rooms in which electrical system failure is not likely to cause injury to patients. Patient care rooms are required to have a Type 3 EES where the life safety branch has an alternate source of power that will be effective for 1 1/2 hours.
(For full text, refer to NFPA 99-2012: 3.3.138; 6.3.2.2.10; 6.6.2.2.2; 6.6.3.1.1)

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)		ESP-1

22. Hospital-grade receptacles at patient bed locations and where deep sedation or general anesthesia is administered are tested after initial installation, replacement, or servicing. In pediatric locations, receptacles in patient rooms (other than nurseries), bathrooms, play rooms, and activity rooms are listed tamper-resistant or have a listed tamper-resistant cover. Electrical receptacles or cover plates supplied from the life safety and critical branches have a distinctive color or marking. (For full text, refer to NFPA 99-2012: 6.3.2; 6.3.3; 6.3.4; 6.4.2.2.6; 6.5.2.2.4.2; 6.6.2.2.3.2)

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)		ESP-1

23. Power strips in a patient care vicinity are only used for components of movable electrical equipment assemblies used for patient care. These power strips meet UL 1363A or UL 60601-1. Power strips used outside of a patient care vicinity, but within the patient care room, meet UL 1363. In non–patient care rooms, power strips meet other UL standards. (For full text, refer to NFPA 99-2012: 10.2.3.6; 10.2.4; NFPA 70-2011: 400-8; 590.3(D); Tentative Interim Amendment [TIA] 12-5)
Note 1: The mounting of power strips to medical equipment assemblies or the reconfiguration of equipment powered by power strips in a medical equipment assembly must be performed by personnel who are qualified to make certain that this is done in accordance with NFPA 99-2012: 10.2.3.6.
Note 2: Per NFPA 99-2012: 3.3.138, patient care room is defined as any room of a health care facility wherein patients are intended to be examined or treated. Per NFPA 99-2012: 3.3.139, patient care vicinity is defined as a space, within a location intended for the examination and treatment of patients, extending 1.8 meters (6 feet) beyond the normal location of the bed, chair, table, treadmill, or other device that supports the patient during examination and treatment and extending vertically to 2.3 meters (7 feet, 6 inches) above the floor.
Note 3: In new facilities, the number of receptacles shall be in accordance with NFPA 99-2012: 6.3.2.2.6.2. If patient bed locations in existing health care facilities undergo renovation or a change in occupancy, the number of receptacles must be increased to meet the requirements of NFPA 99-2012: 6.3.2.2.6.2 to eliminate the need for power strips.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)		ESP-1

24. Extension cords are not used as a substitute for fixed wiring in a building. Extension cords used temporarily are removed immediately upon completion of the intended purpose. (For full text, refer to NFPA 99-2012: 10.2.3.6; 10.2.4; NFPA 70-2011: 400-8; 590.3(D); Tentative Interim Amendment [TIA] 12-5)

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)		ESP-1

25. Areas designated for administration of general anesthesia (specifically, inhaled anesthetics) using medical gases or vacuum are in accordance with NFPA 101-2012: 8.7 and NFPA 99-2012 as follows:
- Zone valves are located immediately outside each anesthetizing location for medical gas or vacuum, readily accessible in an emergency, and arranged so shutting off any one anesthetizing location will not affect others.
- Area alarm panels are installed to monitor all medical gas, medical-surgical vacuum, and piped waste anesthetic gas disposal (WAGD) systems. Alarm panels include visual and audible sensors and are in locations that provide for

surveillance, including medical gas pressure decreases of 20% and vacuum decreases of 12-inch gauge HgV (mercury vacuum).
- Alarm sensors are installed either on the source side of individual room zone valve box assemblies or on the patient/use side of each of the individual zone valve box assemblies.
(For full text, refer to NFPA 101-2012: 18/19.3.2.3; NFPA 99-2012: 5.1.4.8.7; 5.1.9.3)

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)		ESP-1

26. Areas designated for administration of general anesthesia (specifically, inhaled anesthetics) using medical gases or vacuum are in accordance with NFPA 101-2012: 8.7 and NFPA 99-2012 as follows: The essential electrical system's (EES) critical branch supplies power for task illumination, fixed equipment, select receptacles, and select power circuits. The EES equipment system supplies power to the ventilation system. (For full text, refer to NFPA 101-2012: 18/19.3.2.3; NFPA 99-2012: 6.4.2.2.4.2)

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)		ESP-1

27. Newly engineered smoke control systems are designed, installed, maintained, and tested per NFPA 92-2012. Existing smoke control systems are tested and maintained to established engineering principles unless specifically exempted by the authority having jurisdiction. Systems not meeting the performance requirements of the testing specified in NFPA 101-2012: 19.7.7.1 can be continued in operation only with the specific approval of the authority having jurisdiction. (For full text, refer to NFPA 101-2012: 18/19: 7.7; NFPA 92-2012)
Note: The smoke plume created by the thermal destruction of tissue by cauterizing equipment and lasers is addressed at Standard EC.02.02.01, EP 9.

EP Attributes

New	FSA	CMS	DOC	ESP
		§482.41(d)(2)		ESP-1