Facility Sourcing Practices and Joint Commission Update

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Facility Sourcing Practices
Insight From:

- **Industries**
  - *Healthcare*
  - Manufacturing
  - Technology
  - Gaming
  - Education
  - Hospitality
  - Mining
  - Retail

- **Services**
  - Real Estate
  - Design
  - Construction
  - *Maintenance & Repair*

- **Organizations**
  - For and *Not-For Profit*
  - International to Local
  - Headquarters and *Field*
Healthcare Complexities

• Changing Industry
  – Health insurance market
  – Legislation
  – Regulations
  – Cultural Shifts
  – Organizational Changes
Construction productivity 1950-2012

Real productivity (GDP value-add per employee) by industry in the US
Indexed; 1950 = 1.0

Source: Bureau of Economic Analysis (BEA), Hideyuki (2011)

Source: Construction Users Roundtable, 2018
Maintenance & Repair - Industry Challenges

• Access to qualified contractors
• Quality of work
• Staff limitations & project management
• Experienced trade personnel
• Lack of apprenticeship programs
• Transparency & audit ability
• Develop expertise vs. chase projects
Sourcing Complexities

• Supportive executive sponsor, management and stakeholders

• Portfolio changes – On-site v. off-site

• Initiatives
  – Inclusion (40%)
  – Workforce Diversity
  – Energy Savings
  – Sustainability
  – LEED, WELL, fitwel
  – Life safety and infection control
  – Local Sourcing and community impact
Healthcare Maintenance – Control Labor Costs

- **Insource vs. Outsource**

  - **Internal Departments**
    - Directly Relate to Core Business
    - User Groups – Caregivers, Administration, Staff
    - Purchasing, Supply Chain

  - **Outsourced**
    - Designers/Engineers
    - Contractors
    - Consultants

- **Plant Operations, Facilities, Maintenance**
  - Cost Savings
  - Portfolio Changes – Building Types
Healthcare Maintenance Asset Management

• Library of Information
  – Enterprise Asset Management Systems
    • Asset life-cycle management
    • Flexible preventative maintenance scheduling
    • Mobile wireless handheld options
    • Portal-based software interface

• Shift from Central Hospitals to Satellite Clinics and Offices
  • Building construction and systems
  • Infection control, EVS
  • Joint Commission Surveys
Healthcare Maintenance – Energy Savings

• Energy Solutions
  – Energy Audits
  – Best Practices
  – Unmanned Aerial System

• Equipment
  – Retro-Commissioning
  – HVAC and LED lighting
  – Life-Cycle Cost Analysis

• Big Data
  – Field Measurement and Verification
  – Benchmarking

• Rating Programs
  – LEED
  – Energy Star
Buying Construction and Facility Services

• Support the Mission
  – Doing the Right Thing

• Changing Times
  – Healthcare no longer hospital-centric
  – Portfolio changes
  – Skill sets required
  – End users
  – Environment
Procurement Methods

- Low Bid
- Best Value
- Qualifications-Based
- Sole Source
- Choosing the Best Method
  - Owner risk
  - Owner control
  - Owner relationships
  - Project budget
  - Project schedule
Delivery Methods

- Design/Bid/Build
- Design/Build
- Multi-Prime
- Construction Manager At-Risk
- Third-Party Administration (TPA)
- Master Service Agreement (MSA)
- Group Purchasing Organization (GPO)
- Manufacturer
- Supplier
- Collaborative
Collaborative Delivery Methods

• Integrated Project Delivery (IPD)
  – Align interests, objectives, and practices through a team-base approach

• Job Order Contracting (JOC)
  – Competitively bid, fixed price, multi-year construction/maintenance contract
  – IDIQ (indefinite delivery indefinite quantity contract)
  – Delivery Order Contracting (DOC), Task Order Contracting (TOC), or On-Call Construction (OCC)

• Vendor/Supplier Partnership
  – Utility Companies
  – Third Parties
  – Energy savings performance based
Funding Sources and Contracts

• Funding Sources
  – Internal – Capital/Expense
  – Utility Savings Programs
  – Shared Savings
  – Third Party

• Contract Format
  – Cost plus Fee
  – Guaranteed Maximum Price
  – Lump Sum (fixed price)
  – Guaranteed/Shared Savings
Sourcing Requirements

• Maximum value
• Deliver on Initiatives
• Transparency
• Technology and Reporting
• Minimize risk
• Budget and schedule
• Stakeholder expectations
• Trust Outcome
Facility Sourcing Recommendations

- Be the EXPERT for your own portfolio
- Own Systems and Data
- Clearly define requirements
- One size Does Not fit all
  - Best option might not be incumbent
- Relationships need to go both ways
- Develop and maintain flexibility
- Match specific task with delivery method
- Value Knowledge – ACE Summit
- Delivery method and form of contract need to match project requirements
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EC.01.01.01 EP-3

- The hospital has a *library of information* regarding inspection, testing, and maintenance of its equipment and systems.
- Note: This library *includes* manuals, procedures provided by manufacturers, technical bulletins, and other information.
EC.02.01.03 EP-4

- Smoking materials are removed from patients receiving respiratory therapy.
- When a nasal cannula is delivering oxygen outside of a patient’s room, no sources of ignition are within the site of intentional expulsion (within one foot).
- When other oxygen delivery equipment is used or oxygen is delivered inside a patient’s room, no sources of ignition are within the area of administration (within 15 feet). Solid fuel–burning appliances are not in the area of administration.
- Nonmedical appliances with hot surfaces or sparking mechanisms are not within oxygen-delivery equipment or site of intentional expulsion.
- (For full text, refer to NFPA 99-2012: 11.5.1.1; Tentative Interim Amendment (TIA) 12-6)
EC.02.03.01 EP 9

- The *written fire response plan* .... Staff and licensed independent practitioners are periodically instructed and kept informed with their duties under the plan. A copy of the plan is readily available with the telephone operator or security.
EC.02.03.01  EP 11

- **Periodic evaluations**, as determined by the hospital, are made of potential fire hazards that could be encountered during surgical procedures. *Written fire prevention and response procedures*, including safety precautions related to the use of **flammable germicides** or antiseptics, are established.
EC.02.03.01  EP-12

- When flammable germicides or antiseptics are used during surgeries utilizing electrosurgery, cautery, or lasers the following are required:
  - Packaging is nonflammable
  - Applicators are in unit doses
  - Preoperative "time-out" is conducted…to verify the following:
    – Application site is dry …
    – Pooling of solution has not occurred or has been corrected
    – Solution-soaked materials have been removed….
  (For full text, refer to NFPA 99-2012: 15.13)
EC.02.03.01 EP-13

- NEW WILDCARD:
- The hospital meets all other Health Care Facilities Code fire protection requirements, as related to NFPA 99-2012: Chapter 15.
When quarterly fire drills are required, they are (ALL) unannounced and held at unexpected times and under varying conditions.
The hospital has annual inspection and testing of fire door assemblies ...(No Change)

Note 1: (No Change)

Note 2: For hospitals that use Joint Commission accreditation for deemed status purposes: Nonrated doors should be routinely inspected and maintained in accordance with the facility maintenance program.

Note 3: For additional guidance on testing of door assemblies, see NFPA 101-2012: 7.2.1.5.10.1; 7.2.1.5.11; 7.2.1.15; 8.3.3.1; NFPA 80-2010: 4.8.4; 5.2.1; 5.2.3; 5.2.4; 5.2.6; 5.2.7; 6.3.1.7; NFPA 105-2010: 5.2.1.
Elevators with fire fighters’ emergency operations are tested monthly. The test completion dates and results are documented. (For full text, refer to NFPA 101-2012: 9.4.3; 9.4.6)
EC.02.04.03  EP 8

- Equipment listed for use in oxygen-enriched atmospheres are clearly and permanently labeled (withstands cleaning/disinfecting) as follows:
  - Oxygen-metering equipment, pressure-reducing regulators, humidifiers, and nebulizers are labeled with name of manufacturer or supplier.
  - Oxygen-metering equipment and pressure reducing regulators are labeled "OXYGEN–USE NO OIL."

- (continued…)
EC.02.04.03 EP 8 – continued

- Equipment …are labeled…:
  - Labels on flowmeters, pressure-reducing regulators, and oxygen-dispensing apparatuses designate the gases for which they are intended.
  - Cylinders and containers are labeled… Compressed Gas Association (CGA) C-7.
  - Note: Color coding is not utilized as the primary method of determining cylinder or container contents.

  – (For full text, refer to NFPA 99-2012: 11.5.3.1)
EC.02.04.03 EP 10

- All occupancies containing hyperbaric facilities comply with construction, equipment, administration, and maintenance requirements of NFPA 99-2012: Chapter 14.
EC.02.04.03 EP 26

- .... maintenance on anesthesia apparatus.
  - Tested at the final path to patient after any adjustment, modification or repair.
  - Before the apparatus is returned to service, each connection is checked to verify proper gas flow and an oxygen analyzer is used to verify oxygen concentration.
  - Areas designated for servicing of oxygen equipment are clean and free of oil, grease, or other flammables.

(For full text refer to NFPA 99-2012: 11.4.1.3; 11.5.1.3; 11.6.2.5; and 11.6.2.6)
EC.02.05.01 EP-2

- 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.)
EC.02.05.01 EP-15

- In critical care areas designed to control airborne contaminants....
- Note: For more information about areas designed for control of airborne contaminants, the basis for design compliance is the Guidelines for Design and Construction of Health Care Facilities, based on the edition used at the time of design (if available).
- NOTE: details shortened.
EC.02.05.01 EP-19

- The emergency power supply system’s equipment and environment are maintained per manufacturers’ recommendations, including ambient temperature not less than 40°F;....
EC.02.05.01   EP-20

- Operating rooms … *wet* procedure locations, *unless otherwise determined by a risk assessment* authorized by the facility governing body.
  – Protected by either *isolated power or ground-fault circuit interrupters*.
  – A *written* record of the *risk assessment* is maintained and available for inspection.
  – NFPA 99-2012: 6.3.2.2.8.4, 6.3.2.2.8.7, 6.4.4.2
EC.02.05.01 EP 21

- Electrical distribution in the hospital is based on the following categories:
  - Category 1: Critical care rooms …Type 1 essential electrical system (EES) …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 …Type 1 or Type 2 EES in which electrical system failure …minor injury to patients.
- (continued…)

(continued…)
EC.02.05.01 EP 21 - continued

- Electrical distribution …categories:
  - Category 3: Basic care rooms …**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.

- NFPA 99-2012: 3.3.138; 6.3.2.2.10; 6.6.2.2.2; 6.6.3.1.1)
EC.02.05.01   EP 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 .... listed tamper-resistant or have a listed 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)
EC.02.05.01 EP 23

- **Power strips** in a patient care vicinity are only used for components of **movable electrical equipment** used for patient care that have been assembled by qualified personnel.

- **….meet UL 1363A or UL 60601-1.**

- **….outside of a patient care vicinity, but within the patient care room, meet UL 1363.**

- In non–patient care rooms….UL standards.

- NFPA 99-2012: **10.2.3.6; 10.2.4;** NFPA 70-2011: 400-8; 590.3(D);
EC.02.05.01  EP 24

- Extension cords are **not** used as a **substitute** for fixed wiring in a building. …**removed** immediately upon completion of the purpose for which it was intended.
- **NFPA 99-2012**: 10.2.3.6; 10.2.4;
- **NFPA 70-2011**: 400-8; 590.3(D);
EC.02.05.01 EP 25

- Areas [administering] ...inhaled anesthetics using medical gases or vacuum are in accordance with NFPA 101-2012: 8.7 and NFPA 99-2012 as follows:
  - Zone valves ...immediately outside each anesthetizing location for medical gas or vacuum, readily accessible ...shutting off any one anesthetizing location will not affect others.
- (continued...)

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Areas [administering]….  

– Area alarm panels …**monitor all** medical gas, medical-surgical vacuum, and piped waste anesthetic gas disposal (WAGD) systems. ….include **visual and audible sensors** …in locations that provide for **surveillance**, including medical gas pressure decreases of 20% and vacuum decreases of 12-inch gauge HgV.
Areas [administering]...

- Alarm sensors ... on the **source side** of individual room zone valve box assemblies or on the **patient/use side** of each of the individual zone box valve assemblies.

- NFPA 101-2012: 18/19.3.2.3; NFPA 99-2012: 5.1.4.8.7; 5.1.9.3
EC.02.05.01  EP 26

- Areas [administering] inhaled anesthetics using medical gases or vacuum are in accordance with NFPA 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.
  - NFPA 101-2012: 18/19.3.2.3; NFPA 99-2012: 6.4.2.2.4.2
EC.02.05.03  EP 4

- New buildings equipped with or requiring the use of life support systems....
  - **Illumination** of means of egress, emergency lighting equipment, exit, and directional signs supplied by the **life safety branch**....
  - NFPA 101-2012: 18.2.9.2; 18.2.10.5 and NFPA 99-2012: 6.4.2.2
EC.02.05.03 EP-13

- The hospital provides emergency power for elevators….
- Note: For guidance…. refer to NFPA 99-2012: 6.4.2.2.5; 6.4.2.2.5.4
EC.02.05.03 EP-14

- The hospital implements a policy to provide emergency backup for essential medication dispensing equipment identified by the hospital, such as automatic dispensing cabinets, medication carousels, and central medication robots.
- Note: Examples of emergency backup can include emergency power, battery-based indoor generators, or other actions describing how dispensing and administration of medications will continue when emergency backup is needed.
- **NOTE:** Documentation required. Part of MM release in June, 2017.
The hospital implements a policy to provide emergency backup for essential refrigeration for medications identified by the hospital, such as designated refrigerators and freezers.

Note: Examples of emergency backup can include emergency power, battery-based indoor generators, or other actions describing how refrigeration of medications will continue when emergency backup is needed.

EC.02.05.03 EP 16

- For hospitals that use Joint Commission accreditation for **deemed** status purposes:
  Battery lamps and flashlights are available in areas not serviced by the emergency supply source.
Line isolation monitors (LIM), …tested at least monthly …per NFPA 99-2012: 6.3.2.6.3.6, which activates both visual and audible alarms.

For LIM circuits with automated self-testing, a manual test is performed at least annually.

LIM circuits are tested after any repair….

Records are maintained… containing date, room or area tested, and results.

NFPA 99-2012: 6.3.2; 6.3.3; 6.3.4
EC.02.05.07  EP 1

- At least monthly, the hospital performs a functional test of emergency lighting systems and EXIT signs required for egress and task lighting.

- NFPA 101-2012: 7.9.3; 7.10.9; NFPA 99-2012: 6.3.2.2.11.5
Every 12 months, the hospital performs a functional test of battery-powered lights on the inventory required for egress and exit signs for a duration of 1 ½ hours. For new construction, renovation, or modernization, battery-powered lighting in locations where deep sedation and general anesthesia are administered is tested annually for 30 minutes…. (See also LS.02.01.20, EP 39) (For full text, refer to NFPA 101-2012: 7.9.3; 7.10.9; NFPA 99-2012: 6.3.2.2.11.5)

NOTE: “random test of 10%...” deleted.
EC.02.05.09  EP 1

- Medical gas, medical air, surgical vacuum, WAGD, and air supply systems in which failure is likely to cause major injury or death are designated as follows:
  - Category 1: Systems in which failure is likely to cause major injury to patients
  - Category 2: Systems in which failure is not likely to cause minor injury, but can cause discomfort
  - Category 3: Deep sedation and general anesthesia are not administered when using a Category 3 medical gas system
  - NFPA 99-2012: 5.1.1.1; 5.2.1; 5.3.1.1; 5.3.1.5
When the hospital uses cylinders with an integral pressure gauge:

- When less than 301 cubic feet in a single smoke compartment, individual cylinders available for immediate use in patient care areas with an aggregate volume of less than or equal to 300 cubic feet are not required to be stored in an enclosure. Cylinders must be handled with precautions as specified in NFPA 99-2012: 11.6.2
- NFPA 99-2012: 5.1.3.1; 5.1.3.2.3; 5.2.3.1; 5.3.10; 11.3; 11.6.5.2.1)
EC.02.05.09 EP 7

- In time frames defined by the hospital, the hospital inspects, tests, and maintains critical components of piped medical gas and vacuum systems; waste anesthetic gas disposal (WAGD); and support gas systems on the inventory. This inventory of critical components includes at least all source subsystems, control valves, alarms, manufactured assemblies containing patient gases and inlets and outlets. Activities, dates, and results are documented. Persons maintaining the systems are qualified by training and certification to the requirements of the American Society of Sanitary Engineers (ASSE) 6030 or 6040. (For full text, refer to NFPA 99-2012: 5.1.14.2; 5.1.15; 5.2.14; 5.3.13)
EC.02.05.09  EP 11

- The hospital makes main supply valves and area shutoff valves…
- Piping is labeled …including the name of system or chemical symbol, color code (see Table 5.1.11), and operating pressure if other than standard.
- Labels …not more than 20 ft., in …every room, at both sides of wall penetrations, and on every story traversed by riser…. not painted.
- … identified with the name or chemical symbol of the gas or vacuum system, room or area served, and caution to not use the valve except in emergency
- NFPA 99-2012: 5.1.4; 5.1.11.1; 5.1.11.2; 5.1.14.3; 5.2.11; 5.3.13.3; and 5.3.11
The hospital implements a policy on all cylinders:...

- Labeling, handling, and transporting (for example, in carts, attached to equipment, on racks) in accordance with NFPA 99-2012: 11.5.3.1 and 11.6.2
- Physically segregating....
- Adaptors or conversion fittings are prohibited

(continued....)
EC.02.05.09  EP 12

- The hospital implements a policy….:
  - Oxygen cylinders, containers, and associated equipment are protected from contact with oil and grease,
  - Cylinders are kept away from heat and flammable materials, and are prevented from exceeding 130°F
  - Nitrous oxide and carbon dioxide cylinders are prevented from reaching temperatures lower than manufacturer recommendations or -20°F
The hospital implements a policy: 

- Valve protection caps (if supplied) are secured in place if supplied and cylinder is not in use
- Labeling… empty cylinders
- Prohibiting transfilling in any compartment with patient care

(For full text, refer to NFPA 99-2012: 11.6.1; 11.6.2; 11.6.5; 11.7.3) [Shorter reference]
Questions?
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