

SECTION 16: MEDICAL AND DENTAL EQUIPMENT

16.1 General. This section provides guidance on medical and dental equipment for facilities. Equipment procurement for projects shall be in accordance with MIL-STD-1691, "Construction and Material Schedule for Military Medical and Dental Facilities" (reference 16a). This standard provides a uniform basis upon which the using Military Department can identify items of construction and material and fix logistical and financial responsibility (see Section 1).

16.1.1 Approval of Equipment Design Features. Quality and type of equipment and furniture, e.g., stainless steel, steel, wood, gas fired or electric, shall be determined by the using Military Department in each instance, based on the intended life and mission of the facility and the location and circumstance under which construction is to be accomplished.

16.1.2 Approval of Substitutions. When design and space limitations necessitate substitution of equipment in the preparation of drawings, these substitutions shall be coordinated with and approved by the using Military Department. If the substitution results in a change in the Category E and F funding level (decrease or increase), it must also be coordinated with TMA-DMFO.

16.2 Procurement. Provide logistical categories of equipment in accordance with MIL-STD-1691. The using Military Department will transfer items of existing equipment to the new or altered facility whenever feasible and economical. This decision to reuse existing equipment shall be based upon the life expectancy of the equipment at the time of beneficial occupancy (BOD), the repair costs experienced with the existing unit, and the operational considerations involved in moving the equipment prior to operation of the new or altered facility.

16.2.1 Logistical Responsibility. Equipment shall be funded, procured and installed in accordance with the following legend. Each item of equipment is identified in MIL-STD-1691 (reference 16a) by these designations.

16.2.1 A- Contractor furnished and contractor installed (CFCI) from military construction appropriation funds (Military Construction Appropriations, MILCON).

16.2.2 B- Government furnished from the using Military Department's operating funds other than construction and installed by Contractor (GFICI) construction funds (Military Construction Appropriations, MILCON). Operating funds shall be as determined by the using Military Department.

16.2.3 C- Government furnished and government installed (GFGI) from existing assets or from funds other than MILCON as determined by the using Military Department.

16.2.4 D- Other (leased or rented equipment, or that obtained under special conditions as indicated). Funds shall be determined by the using Military Department and other than MILCON.

16.2.5 E- Government furnished and Contractor installed from Military Construction Appropriation funds (MILCON). Delay procurement until the latest date feasible that shall not interfere with project completion to acquire the latest technology.

16.2.6 F- Government furnished and government (vendor) installed from Military Construction Appropriation funds (MILCON). Delay procurement until the latest date feasible that shall not interfere with project completion to acquire the latest technology.

16.2.7 G- Government furnished and government installed from other than MILCON funds through special justification, authorization and funding. Examples of category G equipment or equipment systems are Composite Healthcare (computer) Systems (CHCS) implementation and so forth.

16.2.8 R- Existing government owned equipment that will be relocated and reused. Cost of relocation, if incurred, will be from funds as determined by the using Military Department and other than MILCON.

16.3 Design. Develop equipment plans as a building system integrated with architectural, structural, mechanical, and electrical systems. Equipment shall be arranged and organized so as to provide adequate circulation, workflow, and maintenance clearances.

16.3.1 Layout and Clearances. Arrange equipment to provide service clearances and maintenance access with minimum disruption to work spaces. When expansion is anticipated in a project, allow for the addition of equipment without disruption or reconfiguration of workflow in the layout of sterilizing and sanitizing equipment spaces or any other spaces affected by the addition.

16.3.2 Recessed Equipment. Surgical storage consoles, wall-mounted panels, and accessories in operating rooms shall be flush mounted and of the wall-recessed or through-wall types, for aseptic control.

16.3.3 Casework. All built-in casework shall be fabricated and designated in accordance with Military Specification MIL-C-20709 (reference 16b). All other casework shall be designated, specified, and installed in accordance with MIL-C-29240 (reference 16c), MIL-M-29241 (reference 16d), and other specifications as directed by the Design Agent.

16.3.3.1 Provide corrosion resistant steel (CRS) or other nonporous, seamless joint casework in the following areas: operating and delivery rooms; their sub-sterile and cleanup areas; laboratory (as required by the Military Department); central sterile supply decontamination and clean-up areas; and autopsy and its associated clean-up areas.

16.3.3.2 Movable, modular ("systems") casework systems may be used in projects deemed appropriate by the using Military Department.

16.4 Special Requirements. Special equipment and system planning and utility requirements are incorporated into other technical Sections.

16.5 Food Service Equipment.

16.5.1 Design, construct, and install all serving line and food preparation equipment according to the highest industry standards. Provide

for mobility, flexibility, interchangeability, and ease of cleaning and maintenance for all specified equipment.

16.5.2 Automatic conveyors, belt lifts, and similar devices are unacceptable for delivering patients' meals to the nursing units. Unless special design instructions, approved by DMFO, are issued to the contrary, use a manual, mobile patient tray cart system.

16.5.3 When the kitchen is served by a central steam distribution system, the vegetable steamer-cooker and all other equipment that allows food to be brought into direct contact with live steam is to be served by an independent steam generator. Boiler water treatment renders steam from a central steam plant unsuitable for direct contact with food.

16.5.4 Provide cart wash areas with a combination steam-water mixing unit and a 3 meter (10 foot) hose for washing carts. Provide the area with a floor drain and a separate exhaust fan for evacuating steam heat and vapors.

16.5.5 Specify a conveyor-type dishwasher with sizing dependent on anticipated workload. Provide a booster water heater capable of providing 60 degree C (140 degree F) wash and 82 degrees C (180 degree F) rinse cycle.

16.5.6 Provide the pots and pans wash sink assembly with a spray hose assembly located near the garbage disposal. When specified in the design guidance, automatic pot washers may be used at large facilities and include booster water heater capable of providing 60 degrees C (140 degree F) wash and 82 degrees C (180 degrees F) rinse cycle.

16.6 Dental. Various models of dental radiographic units require different structural wall supports. When two or more units are installed in the same room, use a single control unit when feasible.

16.7 High Technology Equipment. The planning for and inclusion of new or unique medical technology such as linear accelerators, Positron Emission Technology (PET), lithotripsy, Magnetic Resonance Imaging (MRI), hyperbaric chambers, etc., in a MILCON project is the responsibility of the DoD Defense Health Council (DHC). Project specific guidance on equipment of this category will be issued to the Design Agents by DMFO. Design shall be in accordance with the recommendations and guidance of the respective manufacturers.

16.8 Magnetic Resonance Imaging Facilities (MRI). The planning, design, and installation of a Magnetic Resonance Imaging (MRI) system in a Medical Treatment Facility requires extreme care to assure that the magnet is sufficiently isolated from ferromagnetic and radio frequency influences of the impacted environment and that the surrounding environment is isolated from the effects of the magnetic field. Therefore, the selection of the proper siting of the magnet is extremely important and shall be addressed in the earliest stages of the planning and design of the MRI system. Follow the specific guidance of the manufacturer of the selected equipment.

16.9 Hyperbaric Chambers. Hyperbaric oxygen therapy is used as an adjunct to the clinical and surgical treatment of certain diseases. It consists of administering oxygen to the patient at pressures greater than one atmosphere in a compressed air chamber. The DOD agency responsible for design requirements and certification is the Naval Facilities Engineering

Command. This agency is available to assist Design Agents, using Military Departments, and A-E firms as needed.

REFERENCES

- 16a. MIL-STD-1691, "Construction and Material Schedule for Military Medical and Dental Facilities."
- 16b. MIL-C-20709, "Casework, Metal and Wood (Medical and Dental)."
- 16c. MIL-C-29240, "Casework Moveable and Modular for Hospital Laboratories and Pharmacies."
- 16d. MIL-M-29241, "Material Handling Units for Medical Facilities."